

COMBATING WILDLIFE TRADE IN BANGLADESH

CURRENT UNDERSTANDING AND NEXT STEPS



Wildlife
Conservation
Society

COMBATING WILDLIFE TRADE IN BANGLADESH

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Combating wildlife trade in Bangladesh: current understanding and next steps

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Message

Wildlife trade is one of the most urgent conservation threats facing global biodiversity including iconic species threatened with extinction. Despite the urgency of this threat, little is known in Bangladesh about the scale of wildlife trade, species being traded, actors involved, trade routes and connections with national and transnational criminal syndicates. This hampers the ability of the government to take effective measures to combat wildlife trade and protect threatened species.

The *Report on Combating Wildlife Trade in Bangladesh: Current Understanding and Next Steps* was prepared by the Wildlife Conservation Society (WCS) with support from the Bangladesh Forest Department (BFD) and other government agencies engaged in combatting wildlife trade in Bangladesh. It provides a foundation of knowledge on wildlife trade in Bangladesh and guidance on a way forward. The report highlights the complexity of wildlife trade chains and prioritizes species according to the geographical extent and magnitude of their occurrence in national and international media reports, markets and restaurants, and government records. Interviews with government officials from the BFD, Rapid Action Battalion, Bangladesh Border Guards, Customs and the Department of Fisheries also provide essential guidance for strengthening interagency collaboration.

The Government of Bangladesh has demonstrated a strong commitment to combatting wildlife trade through the implementation of a Spatial Monitoring and Reporting Tool (SMART) during law enforcement patrols in the Sundarbans, engagement in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and South Asia Wildlife Enforcement Network (SAWEN), and the establishment of the Wildlife Crimes Control Unit within the BFD. We look forward to engaging with relevant agencies of the Government of People's Republic of Bangladesh and non-government organizations on implementing recommendations of the report for combatting wildlife trade.



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Chief Conservator of Forests
Bangladesh Forest Department

সারসংক্ষেপ

বাংলাদেশ প্রাকৃতিক সম্পদ বৈচিত্র্যপূর্ণ বন্যপ্রাণীর আবাসস্থল যাদের অনেকেই স্থানীয় ও আন্তর্জাতিক ব্যবসার কারণে বিশ্বব্যাপী বিপন্ন। এই গবেষণার মাধ্যমে বন্যপ্রাণীর বাণিজ্য সম্পর্কিত জ্ঞানের একটি ভিত্তি তৈরি হবে যা পরবর্তীতে বিলুপ্তির সম্মুখীন বন্যপ্রাণীর বাণিজ্য রোধে কাজ করতে এবং এদেরকে রক্ষা করতে সাহায্য করবে। এই গবেষণাটি পরিচালনা করতে ওয়াইল্ডলাইফ কনজারভেশন সোসাইটি বাংলাদেশ প্রোগ্রাম (১) জাতীয় ও আন্তর্জাতিক সংবাদ মাধ্যমে অনুসন্ধান; (২) বিভিন্ন সরকারি কর্মকর্তা যারা বন্যপ্রাণীর অবৈধ চালান বন্ধ করতে কাজ করছে, বন্যপ্রাণী সংরক্ষণে কাজ করছে এমন এনজিও-সমূহ এবং হাঙ্গর ও শাপলাপাতা মাছের ব্যবসা করেন এমন ব্যক্তিদের সাক্ষাৎকার গ্রহণ; (৩) স্থানীয় বাজার, মৎস্য অবতরণ কেন্দ্র ও রেস্টুরেন্টসমূহ যেখানে এসব প্রাণীর কেনা-বেচা এবং খাওয়া হয় সেসব স্থান পরিদর্শন এবং (৪) সরকারি ও বেসরকারি সংস্থাসমূহের তথ্য যাচাই করেছে।

এই গবেষণার ফলাফলে দেখা যায় যে, ভৌগোলিক অবস্থানের কারণে বন্যপ্রাণী পাচার বাংলাদেশের জন্য একটি প্রধান সমস্যা এবং এর মধ্যে রয়েছে বিপুল সংখ্যায় বিভিন্ন প্রজাতির বন্যপ্রাণী যারা আইইউসিএন (IUCN) এবং কনভেনশন অন ইন্টারন্যাশনাল ট্রেড ইন এন্ডেনজারড স্পিসিস অফ ওয়াইল্ড ফ্লোরা এন্ড ফনা (CITES) দ্বারা সংরক্ষিত। এই ফলাফল আরও উপস্থাপন করে বন্যপ্রাণীর চোরাচালানের ধারার একটি জটিল অবস্থা যেখানে (১) বাংলাদেশ কখনও চালানকৃত বন্যপ্রাণীর প্রজাতি বা প্রজাতিসমূহের উৎপত্তিস্থল; (২) কখনোবা এই প্রজাতি বা প্রজাতিসমূহ আন্তর্জাতিকভাবে বাণিজ্য করার পরিবর্তে বাংলাদেশে খাওয়া হচ্ছে বা ব্যবহার করা হচ্ছে; অথবা (৩) বাংলাদেশকে বন্যপ্রাণীর চালানের মাধ্যম বা রুট হিসেবে ব্যবহার করে যেসব দেশে এদের খাওয়া হয় বা ব্যবহার করা হয় সেসব দেশে চালান করা হচ্ছে।

মিষ্টিপানির কচ্ছপসমূহ সম্ভবত সবচেয়ে বেশি গুরুত্ব পাওয়ার দাবিদার কারণ সাইটিসের পরিশিষ্ট ১ ও ২-এ এরা সংরক্ষিত এবং এর পাশাপাশি সংবাদ মাধ্যমে, স্থানীয় বাজার ও রেস্টুরেন্ট পরিদর্শনে এবং ভারত ও চীনের ওয়াইল্ডলাইফ কনজারভেশন সোসাইটি প্রোগ্রামের প্রতিবেদন অনুযায়ী এরা অনেক বেশি পরিমাণে বন্যপ্রাণী চালানের শিকার। যেসব প্রজাতি চোরাচালানের শিকার তার এক তৃতীয়াংশের বেশি হচ্ছে ছোট-বড় বিভিন্ন ধরনের স্তন্যপায়ী প্রাণী এবং এদের মধ্যে ৮২% হল চিত্রা ও মায়া হরিণ। এই দুই প্রজাতির হরিণের কোনটিই বিপন্ন না হলেও অতিরিক্ত মাত্রায় এদের আহরণ বাঘ রক্ষার ক্ষেত্রে হুমকিস্বরূপ। এছাড়াও বাঘ, ছোট বিড়াল জাতীয় প্রাণী ও বনরুইয়ের মত বিপন্ন প্রাণীর অল্প পরিমাণ চালানও এদেরকে স্থানীয় বিলুপ্তির পথে ঠেলে দেয়। যেমন মহাবিপন্ন চাইনিজ বনরুই আন্তর্জাতিক বাজারে এর চাহিদার কারণে বাণিজ্যিকভাবে শিকারের ফলস্বরূপ পার্বত্য চট্টগ্রামের বেশিরভাগ জায়গা থেকে বিলীন হয়ে গেছে। তক্ষকের আন্তর্জাতিক বাণিজ্য একটি সাম্প্রতিক উদ্বেগের বিষয়। অনেক বেশি মূল্যে তক্ষক বিক্রির খবর এটাই প্রমাণ করে যে আন্তর্জাতিক বাজারে বিপুল চাহিদা যেকোন প্রাণীকে নিকট ভবিষ্যতে বিপন্ন করে তুলতে পারে। হাঙ্গর ও শাপলাপাতার বাণিজ্যও উদ্বেগের কারণ। মৎস্য অবতরণকেন্দ্রসমূহ থেকে সংগৃহীত ওয়াইল্ডলাইফ কনজারভেশন সোসাইটির বাংলাদেশ প্রোগ্রামের তথ্যসমূহ থেকে দেখা যায় যে অনেক বিপন্ন প্রজাতির হাঙ্গর ও শাপলাপাতা মাছ স্থানীয় ও আন্তর্জাতিক বাজারে কেনা-বেচা করা হচ্ছে।

বন্যপ্রাণী চোরাচালানের বাজার ব্যবস্থাপনার তথ্যের ঘাটতি বিভিন্ন সরকারি সংস্থাসমূহের এই বাণিজ্যকে প্রতিহত করার ক্ষমতাকে ব্যহত করেছে। বাস্তব প্রমাণসমূহ দেখাচ্ছে যে এখানে (১) মায়ানমার বর্ডার সংলগ্ন বান্দরবান জেলা থেকে ঢাকা পর্যন্ত পোষা প্রাণী যেমন ধনেশ, ময়না, টিয়া ও ভাল্লুকের বাচ্চার একটি স্থানীয় বাজার রয়েছে; (২) বনরুইয়ের আঁশ, এবং বন্যবিড়ালের চামড়া ও হাড়ের আন্তর্জাতিক চোরাচালানের একটি গমনপথ বান্দরবান থেকে মায়ানমার পর্যন্ত বিস্তৃত; এবং (৩) স্বাদুপানির কচ্ছপ আন্তর্জাতিক চালানের গমনপথ শুরু হয়েছে ব্রাহ্মণবাড়ীয়া (চট্টগ্রাম বিভাগ) ও মৌলভীবাজার (সিলেট বিভাগ) থেকে ভারতের আসাম ও মেঘালয় পর্যন্ত এবং ভারতের পশ্চিমবঙ্গ থেকে বাংলাদেশ পর্যন্ত। চট্টগ্রাম ও কক্সবাজারে হাঙ্গরের পাখনার নদীপথে একটি শক্তিশালী বাণিজ্য ব্যবস্থাপনা বিদ্যমান মায়ানমারের বর্ডারের কাছে টেকনাফে, সেখান থেকে জাহাজের মাধ্যমে মায়ানমার থেকে ইয়াঙ্গুন ও চীনে চালান দেয়া হয়।

সুপারিশসমূহ হচ্ছে (১) আইনি সংস্কার; (২) অপরাধ বা ফৌজদারি বিচার ব্যবস্থাপনাকে শক্তিশালী করা; (৩) প্রাতিষ্ঠানিক সংস্কার; (৪) বিভিন্ন সংস্থাসমূহের মাঝে সহযোগিতা শক্তিশালী করা; (৫) বন্যপ্রাণী থেকে উৎপাদিত পণ্যের চাহিদা কমানো; (৬) সীমান্তে নিয়ন্ত্রণ শক্তিশালী করা; (৭) স্থানীয় জনগণকে বন্যপ্রাণী চালান প্রতিরোধে শক্তিশালী করা; (৮) নিয়মিত প্রশিক্ষণ ও পরামর্শ; (৯) বন্যপ্রাণী আইন প্রয়োগ ও তদারকির জন্য টেকসই বা বহমান অর্থায়ন পদ্ধতি গড়ে তোলা; (১০) সাইটিসের নিয়মনীতি প্রয়োগের জন্য সরকারের ক্ষমতাকে শক্তিশালী করা; (১১) ফ্রন্টলাইন কর্মকর্তাদের দক্ষতা বৃদ্ধি; (১২) বন্যপ্রাণীর চালান রোধে প্রজাতি/প্রজাতিগুচ্ছ ভিত্তিক পরিকল্পনা গড়ে তোলা; (১৩) পত্রিকা ও বিভিন্ন সংবাদমাধ্যমের প্রতিবেদকদের প্রশিক্ষণ প্রদান করা; (১৪) বন্যপ্রাণী চোরাচালান রোধে বন্যপ্রাণীর বাণিজ্যের তথ্যভান্ডারকে শক্তিশালী করা; এবং (১৫) বন্যপ্রাণী অপরাধের একটি আন্তর্জাতিক তথ্যভান্ডার গড়ে তোলা।

Executive Summary

Bangladesh supports a rich diversity of wildlife including significant populations of globally endangered species threatened by domestic and international wildlife trade. The goal of this scoping study is to establish a foundation of knowledge on wildlife trade as a means for providing effective guidance on a way forward to combat it and protect wildlife at extinction risk. To conduct the study, WCS Bangladesh (i) conducted national and international media surveys; (ii) interviewed Government of Bangladesh (GoB) officials involved in combatting wildlife trade, representatives of conservation NGOs, and shark and ray traders; (iii) visited local markets, fish landing sites, and restaurants where wildlife trade/consumption was suspected to occur; and (iv) examined wildlife trade records from GoB and NGO sources.

The results of the study indicate that wildlife trafficking is a major, geographically extensive problem in Bangladesh involving several different taxonomic groups with a large number of species considered threatened in the IUCN Red List and protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The results demonstrate the complexity of wildlife trade chains that vary according to (i) whether Bangladesh is the country of origin for the species or species group; (ii) whether the species or species group is being consumed or used in Bangladesh versus traded internationally; or (iii) if Bangladesh is being used as a trade corridor for wildlife consumed or used in another country.

Freshwater turtles and tortoises are probably the highest priority species group in need of urgent attention according to the large number of species involved that are considered threatened and included in CITES Appendix I or II as well as the large number of incidents and individuals reported in the media searches, visits to markets and restaurants, and reports from WCS Programs in India and China. Records of large and small mammals accounted for more than one third of the total species incidents of which 82% were for spotted and barking deer. Although both deer species are not threatened with extinction, deer trade is a recognized threat to the recovery of tigers due to prey depletion. Additionally, even limited trade in threatened species such as tigers, small cats, and pangolins can drive local extinctions. For instance, the Critically Endangered Chinese pangolin has been extirpated from most areas of the Chittagong Hill Tracts due to commercial hunting for international trade. International trade in tokay geckos is an emerging concern. The high prices reportedly paid for these reptiles indicate a strong demand resulting in international trade that could threaten the species in the future. Trade in sharks and rays is also an emerging concern. Information collected by WCS in Bangladesh from fish landing sites shows large numbers of threatened sharks and rays being traded for both national and international markets.

There remain major gaps of information on wildlife trade chains which hamper the ability of the GoB to combat it. Anecdotal evidence indicates that there exist a (i) domestic trade route for the pet market that includes hornbills, mynas, parrots, and bear cubs from the Bandarban District near the border with Myanmar to Dhaka; (ii) international trade route for pangolin scales, and skins and bones of wild cats - also from the Bandarban to Myanmar; and (iii) international trade routes of freshwater turtles from Brahmanbaria (Chittagong Division) and Maulvibazar (Sylhet Division) to the Assam and Meghalaya states in India and from the West Bengal state of India to Bangladesh. A vigorous trade in shark fins also occurs from Chittagong and Cox's Bazar by boat to the Myanmar border near Teknaf and then transferred to vessels from Myanmar for transport to Yangon and onward to China.

Recommendations include (i) Legal Reforms; (ii) Strengthening the criminal justice system; (iii) Organizational reforms; (iv) Strengthening interagency cooperation; (v) Reducing demand for wildlife products; (vi) Strengthening border controls; (v) Strengthening community stakes in combating wildlife crime; (vi) Regular trainings and consultations; (vii) Developing sustainable financing mechanisms for wildlife law enforcement and monitoring; (viii) Strengthening the capacity of the GoB to implement CITES regulations; (ix) Strengthening the capacity of frontline officials; (x) Developing species/species group specific plans for combating wildlife trade; (xi) Providing training to news reporters and media representatives; (xii) Strengthening a Wildlife Trade Media Database to combat wildlife crime; and (xiii) Establishing an interagency wildlife crime database.

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List of Acronyms and Abbreviations

AAP	Airport Armed Police
BFD	Bangladesh Forest Department
BDT	Bangladesh Taka (national currency)
BEDS	Bangladesh Environment and Development Society
BGB	Border Guards Bangladesh
BP	Bangladesh Police
CCA	Creative Conservation Alliance
CCF	Chief Conservator of Forests
CEGIS	Center for Environment and Geographical Information Services
CG	Coast Guard
CHT	Chittagong Hill Tracts
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CR	Critically Endangered
CU	Bangladesh Customs
DD	Data Deficient
DoF	Department of Fisheries
EN	Endangered
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Society for International Cooperation, Ltd.)
GoB	Government of Bangladesh
ICCWC	International Consortium on Combating Wildlife Crime
INTERPOL	International Criminal Police Organization
IUCN	International Union for Conservation of Nature
LC	Least Concern
LS	Listed
MoEF	Ministry of Environment and Forests
MC	Mobile Court
NCB	National Central Bureau
NE	Not Evaluated
NGO	Non-Governmental Organization
NL	Not Listed
NT	Near Threatened
POR	Prosecution Offence Report
RAB	Rapid Action Battalion
SAWEN	South Asia Wildlife Enforcement Network
SMART	Spatial Monitoring and Reporting Tool
SRCWP	Strengthening Regional Cooperation for Wildlife Protection Project
UDOR	Undetected Offence Report
UNODC	United Nations Office on Drugs and Crime
VU	Vulnerable
VDP	Village Defense Party
WCCU	Wildlife Crime Control Unit
WCS	Wildlife Conservation Society
WT	WildTeam

Goal and Objectives

The goal of this scoping study was to establish a foundation of knowledge and identify information gaps on wildlife trade as a means for providing effective guidance to the Government of Bangladesh (GoB), international donors and conservation-oriented non-governmental organizations (NGOs) on a way forward to combat it and protect threatened species from extinction.

The more specific objectives were to:

- Assesses the magnitude, extent and patterns of wildlife trade in globally threatened species including tigers, elephants, pangolins, ornamental birds, freshwater turtles, tortoises, sharks and rays.
- Compile evidence on the actors involved in illegal wildlife trade including the set of conditions that allows them to engage in poaching and trafficking as well as possible links with other forms of domestic and transnational crime.
- Map illegal wildlife trade chains based on existing information including connections with national and transnational syndicates.
- Identify key gaps of information needed to tackle illegal wildlife trade for both species and products originating in Bangladesh and those being moved through the country as a regional/international trade route.

After preliminary interviews with government officials indicated confusion about the national laws related to and the roles of different agencies involved with combatting wildlife trade, we added an additional objective to:

- Review national laws (Appendix 1) and the role of law enforcement agencies and courts related to wildlife trafficking in Bangladesh (Appendix 2).

Background

Overview of wildlife diversity

Bangladesh supports a rich diversity of wildlife including at least 120 mammals, 50 amphibians, 150 reptiles, 75 sharks and rays, and 900 birds - of which more than 300 are migratory. Of these species, 130 are considered threatened in the International Union for Conservation of Nature (IUCN) Red List. Of these 36 are mammals, 36 are birds, 34 are sharks and rays, 23 are reptiles, and, one is an amphibian. Of the 130 threatened species, 15 are considered Critically Endangered (CR), 40 Endangered (EN) and 75 Vulnerable (VU) in the IUCN Red List.¹

Particularly iconic threatened wildlife in Bangladesh includes the tiger (*Panthera tigris*); Asian elephant (*Elephas maximus*); hoolock gibbon (*Hoolock hoolock*); Asiatic black bear (*Ursus thibetanus*); Chinese pangolin (*Manis pentadactyla*) (see Trageser *et al.* 2017); Irrawaddy dolphin (*Orcaella brevirostris*); Ganges River dolphin (*Platanista gangetica*); humpback dolphin (*Sousa chinensis*); finless porpoise (*Neophocaena phocaenoides*); Ganges shark (*Glyphis gangeticus*); scalloped hammerhead shark (*Sphyrna lewini*); great hammerhead shark (*Sphyrna mokarran*); longcomb sawfish (*Pristis zijsron*); masked finfoot (*Heliopais personatus*); longheaded eagle ray (*Aetobatus flagellum*); and mottled eagle ray (*Aetomylaeus maculatus*).

¹ http://cmsdocs.s3.amazonaws.com/summarystats/2016-3_Summary_Stats_Page_Documents/2016_3_RL_Stats_Table_5.pdf;
http://cmsdocs.s3.amazonaws.com/summarystats/2016-3_Summary_Stats_Page_Documents/2016_3_RL_Stats_Table_6a.pdf;

A country-based Red List assessment (IUCN Bangladesh 2015) of 1,619 animal species in Bangladesh documented 31 regional extinctions primarily due to hunting. These included 11 large mammals: three rhinoceroses (greater one-horned or Indian - *Rhinoceros unicornis*, Asian two-horned - *Dicerorhinus sumatrensis* and Javan - *Rhinoceros sondaicus*, all three during the 1930s); three deer or ruminants (swamp deer - *Rucervus duvaucelii* in the 1950s, nilgai - *Boselaphustrago camelus* in the 1930s and black buck - *Antelope cervicapra* at the end of the 19th century); two bovids (wild water buffalo - *Bubalus arnee* and Banteng - *Bos javanicus*, both in the 1940s); one canid (Indian wolf - *Canis lupus pallipes* in the mid-1900s); one hyena (striped hyena - *Hyaena hyaena* in the early 1900s); and one bear (sloth bear - *Melursus ursinus* at the end of the 21st century). With the exception of the marsh crocodile (*Crocodylus palustris*) all other species (19) are birds.

With notable exceptions in the marine waters of the northern Bay of Bengal, where extreme oceanographic conditions may be driving population differentiation and speciation in mobile megafauna (e.g., humpback dolphins *Sousa* spp. - Amaral et al. 2016 and river sharks (*Glyphis* spp.) - Li et al. 2015), there is a distinct lack of endemism and parenthesis in Bangladesh. This is probably due to the country's recent geological origin and its location at the crossroads of vertebrate range expansions from the Indo-Himalayan region and Southeast Asia that meet their distributional limits in Bangladesh although the exact boundaries are uncertain (IUCN Bangladesh 2015; Trageser et al. 2017).

Rationale for this study

Wildlife trade is the most immediate threat to wild animals in many parts of the world. Around the globe, wildlife is being bought and sold on a massive scale destined for use as pets, meat, medicine, feathers, skins, and trophies.² Few details are known regarding wildlife trade in Bangladesh and its impacts on wild populations. However, anecdotal evidence suggests that it is a growing threat both in terms of the role of the country as a source of endangered wildlife and as a trade route for wildlife poached elsewhere including in neighboring states of India and Myanmar. Uncertainty about the details of wildlife trade includes a lack of understanding on the full set of actors involved in poaching, processing, trafficking and consumption, and the routes by which wildlife is moved to domestic and international markets.

Wildlife Conservation Society (WCS) teams elsewhere in Asia, as well as other conservation organizations, have documented illegal trade in pangolins, tigers, tortoises and freshwaters turtles, birds, and other wildlife coming from other countries and traded through Bangladesh (either for consumption in the country, or for subsequent trade through Bangladesh to other countries). In many cases, the volume of the trade appears to be substantial. In addition, some of India's largest hotspots of illegal trade are in districts immediately adjacent to Bangladesh, with anecdotal evidence suggesting that this may be due to a cross-border trade between the two countries. Given these circumstances, WCS decided to invest in this scoping study on wildlife trade in Bangladesh.

Measures taken by the Government of Bangladesh to combat wildlife crime

To help reduce wildlife poaching and trade, in 2012 the Bangladesh Forest Department (BFD) established the Wildlife Crime Control Unit (WCCU)³ which is responsible for combatting wildlife trade in coordination other national law enforcement agencies, including the Bangladesh Police (BP), Customs (CU), Rapid Action Battalion (RAB) (Figure 1), Border Guards Bangladesh (BGB), Coast Guard (CG), and Department of Fisheries (DoF) (see Roles of GoB agencies in combating wildlife trade).

² <https://www.wcs.org/our-work/solutions/illegal-wildlife-trade>

³ Operations of the WCCU were suspended at the end of 2016 after the end of the World Bank funded Strengthening Regional Cooperation for Wildlife Protection Project (SRCWP). However, operations are expected to resume in 2018 with funding from the GoB.

Bangladesh is a member of the South Asia Wildlife Enforcement Network (SAWEN) and hosted its third annual meeting in Dhaka on 26-27 October 2016. This regional network seeks to combat poaching and trafficking of threatened species in South Asia and strengthen institutional responses through training, capacity building, and technical support. In 2015, the BFD and the International Consortium on Combating Wildlife Crime (ICWC), a collaborative effort of the Convention on International Trade in Endangered Species (CITES), International Criminal Police Organization (INTERPOL), United Nations Office on Drugs and Crime (UNODC), World Bank, and World Customs Organization, convened a workshop to bring coordinated support to national wildlife law enforcement agencies on implementing CITES regulations.

With funding from the World Bank's *Strengthening Regional Cooperation for Wildlife Protection Project* (SRCWP), the BFD has also worked with the Center for Environment and Geographic Information Services (CEGIS) to develop a web-based Wildlife Crime Database to better understand wildlife crime across the country and devise an effective enforcement response. Changing from the current manual data collection system to a computerized database will facilitate better coordination and accountability, as there is a widespread belief that many incidents of wildlife trade currently remain undetected or unrecorded. These important steps demonstrate an emerging capacity for combatting wildlife crime in Bangladesh. However, a great deal of work remains to be done to build on and sustain these efforts.

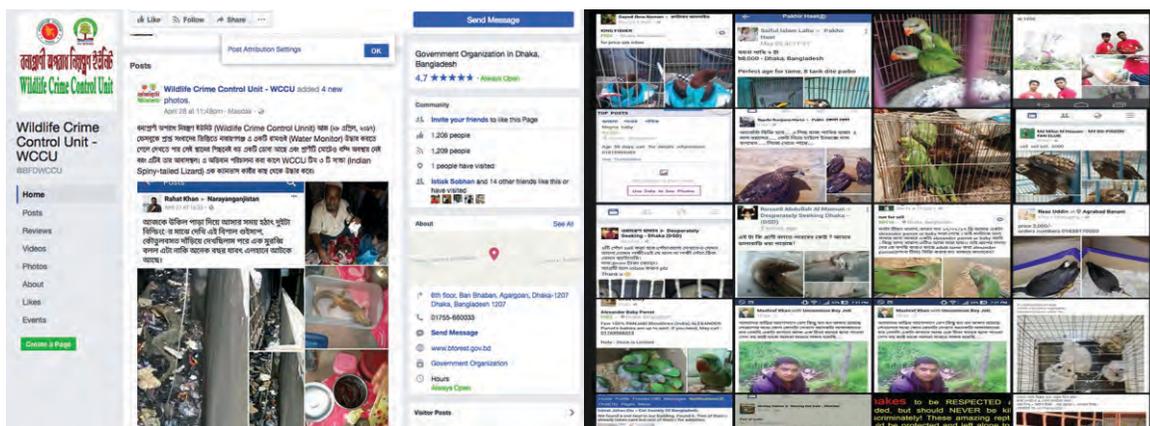


Figure 1. The Wildlife Crime Control Unit (WCCU) receives public reports through its hotline telephone number and Facebook page. While the information provided by the public is mostly from the Dhaka area, it is a potentially valuable platform for investigating wildlife crimes and syndicates across the country

CITES in Bangladesh

Bangladesh ratified its membership in CITES on 20 November 1981 and the Convention entered into force on 8 February 1982. The management authority for CITES is the Chief Conservator of Forests (CCF) of the BFD under the Ministry of Environment and Forests (MoEF) with the Chief Controller of Import and Export granting import and export permits for wildlife after obtaining a no-objection certificate from the CCF. The Scientific Authority is the Bangladesh Wildlife Advisory Board under the Joint Secretary (Administration) MoEF, and the Enforcement Authority is the BFD under the CCF.

CITES Appendix I species that occur in Bangladesh include the tiger (*Panthera tigris*), leopard cat (*Prionailurus bengalensis*), Ganges river dolphin (*Platanista gangetica*), Irrawaddy dolphin (*Orcaella brevirostris*), river terrapin (*Batagur baska*), Indo-Pacific crocodile (*Crocodylus porosus*), smooth-coated otter (*Lutrogale perspicillata*), Bengal monitor (*Varanus bengalensis*), Olive ridley turtle (*Lepidochelys olivacea*), Asian elephant (*Elephas maximus*), clouded leopard (*Neofelis nebulosa*), leopard (*Panthera pardus*), Asiatic black bear (*Ursus thibetanus*), sun bear (*Helarctos malayanus*), giant hornbill (*Buceros bicornis*), Chinese pangolin (*Manis pentadactyla*), marbled cat (*Pardofelis marmorata*), Asiatic

golden cat (*Catopuma temminckii*), and three-keeled land tortoise (*Melanochelys tricarinata*). CITES Appendix II species include the fishing cat (*Prionailurus viverrinus*), Asian small-clawed otter (*Aonyx cinereus*), rhesus monkey (*Macaca mulatta*), dhole (*Cuon alpinus*), Arakan forest turtle (*Heosemys depressa*), Asian giant tortoise (*Manouria emys*), elongated tortoise (*Indotestudo elongata*), Assam roofed turtle (*Pangshura sylhetensis*), Asiatic softshell turtle (*Amyda cartilaginea*), and Indian flapshell turtle (*Lissemys punctata*).

Bangladesh has been an active member of CITES especially in terms of supporting proposals for listing and uplisting species threatened by international trade. At CITES COP17 Bangladesh successfully co-sponsored proposals to transfer Indian Pangolins to CITES Appendix I, and list silky sharks (*Carcharhinus falciformis*), thresher sharks (*Alopias* spp.) and mobula rays (*Mobula* spp.) on CITES Appendix II.

Role of WCS in combatting wildlife trade

Across the globe, WCS strives to stop wildlife trafficking at its source, in transit, and in consumer countries. Our strategic program focusses on strengthening enforcement and monitoring capacity to respond to wildlife trafficking with an emphasis on national and international trafficking networks. WCS has country programs in nearly 60 nations that are working to stop poaching on the ground and wildlife trade that drives hunting and live captures. WCS has also had a long-term presence in countries that are a source, corridor and destination along wildlife trafficking routes and thus our work is reinforced by a global network of wildlife trafficking expertise.⁴

WCS Bangladesh has been working in partnership with the *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ) as part of the *Management of the Sundarbans Mangrove Forest for Biodiversity Conservation and Increased Adaptation to Climate Change Project* (SMP) to protect wildlife at their source and avoid wildlife entering illegal trade (Figure 2). Our key activities include (i) Assisting the BFD and other local partners to implement a Spatial Monitoring and Reporting Tool (SMART) approach to wildlife law enforcement and monitoring patrols across the Sundarbans; (ii) Training frontline government staff and local communities to use information-based approaches to reduce wildlife poaching and illegal fishing; and (iii) Introducing new technologies, tools and cost-effective strategies to help significantly improve the quality of information available for conserving endangered species and the sustainability of long-term monitoring efforts. WCS also plans to provide training and capacity building to relevant GoB agencies involved in combatting wildlife trade, led by the BFD, for the implementation of CITES decisions on Appendix I and II species.

⁴<https://www.wcs.org/our-work/solutions/illegal-wildlife-trade>



Figure 2. SMART training and mentoring provided by WCS to BFD staff has strengthened wildlife law enforcement and monitoring patrols in the Sundarbans.

Methods and Results

Overview

This scoping study employed four main approaches for compiling information on wildlife trade in Bangladesh: (i) national and international media surveys; (ii) targeted interviews with GoB officials, NGO staff and shark and ray traders; (iii) survey visits to local markets, fish landing sites, and restaurants where wildlife trading/consumption was suspected to occur; and (iv) examination of wildlife trade records from GoB and NGO sources including WCS Country Programs elsewhere in Asia.

To increase our geographical and species coverage, we collaborated with the Creative Conservation Alliance (CCA). The CCA focused on helping us assess wildlife trade in southeastern Bangladesh, including the Chittagong Hill Tracts (CHT) where there is special concern about the trade in pangolins, freshwater turtles and tortoises, as well as along the southern coast, including Chittagong and Cox's Bazar, where there is particular concern about trade in sharks and rays. WCS focused on the remainder of the country with a particular emphasis on wildlife trade in Dhaka and from the Sundarbans mangrove forest as well as sharks and rays caught in coastal waters offshore of the Sundarbans and in the mouth of the Meghna River.

Substantial progress was made on addressing all five objectives of the scoping study and our results provide a strong foundation for developing an effective approach to combat and monitor wildlife trade in Bangladesh. However, the study results should be considered a work in progress that will be strengthened as we better address information gaps and enrich our wildlife trade database.

Media searches

National media search

A comprehensive search of 11 media sources, including six national newspapers (5 in Bengali and one in English), two national online news sites (both in Bengali), and three regional newspapers (all in Bengali) identified 283 articles on wildlife trafficking and poaching published between 2012 and 2016 (Table 1). Seven of these media sources were searched using both keywords and manually page by page, three were searched using only keywords, and one was searched page by page. Keyword searches included wildlife, biodiversity, wildlife trade, tiger, deer, turtle, gecko, elephant, monkey, pangolin, bird, snake, lizard, shark and ray. After excluding duplicate stories about the same incident (61) and keeping the most informative one, our national media search on wildlife trade and poaching included 222 unique articles of which 7.2% documented trade or poaching of more than one species or species groups (3.6% two, 2.3% three and

1.4% four) for a total of 249 species or species group incidents documented on wildlife trade and poaching (Table 2).

Based on these 249 species/species group incidents:

- 96% involved wildlife trade, 2.4% poaching, and 1.6% illegal circuses.
- 46.2% involved reptiles, 40.6% mammals, 11.6% birds, and 1.6% sharks and rays.
- Geckos were involved in 18.1%, spotted deer in 6.1%, unidentified freshwater turtles in 14.5%, unidentified deer in 12.4% (probably mostly spotted deer which would make this species the most frequent accounting for about 28.0% of the total incidents), and tiger in 5.2%.
- Indian star tortoise, unidentified egret, fishing cat, Indian roofed turtle, unidentified python, rhesus monkey, unidentified sharks and rays, spotted flap shell turtle, and spotted pond turtle were involved in 1.2-1.6% or 3-4 incidents.
- African gray parrot, Asiatic black bear, bank myna, barking deer, barn owl, Baya weaver, unidentified bear, unidentified bird, black headed munia, black kite, blossom headed parakeet, unidentified cobra, unidentified cockatoo, unidentified cormorant, Indo-Pacific crocodile, unidentified dove, unidentified eagle, elongated tortoise, non-native birds, fulvous whistling duck, golden mantled rosella, emerald dove, green parakeet, griffon vulture, unidentified heron, unidentified hornbill, Indian black turtle, Indian pangolin, Indian peacock soft shell turtle, jungle cat, large Indian civet, leopard, leopard cat, lesser adjutant, marine turtle, monitor lizard, narrow-headed soft shelled turtle, river terrapin, unidentified snake, soft shell turtle, and three keeled land tortoise were involved in less than 1% or 1-2 incidents.
- From 153 of the species or species groups incidents of wildlife trade and poaching that included an identification of species, 43.1% were considered LC, 30.1% unassessed, 12.4% EN, 13.1% VU, 0.7% NT and 0.7% CR according to the IUCN Red List.
- Also from these same incidents, 58.2% were listed in Schedule II, 37.3% in Schedule I, and 4.4% not listed in either schedule of the Wildlife (Conservation and Security) Act, 2012.
- From these same incidents, plus four additional incidents where all members of the species groups (pythons and cobras) could be assigned to a CITES Appendix, for a total of 157 incidents, 60.1% were not listed, 20.3% were listed in Appendix I, 17.7% in Appendix II, and 1.9% in Appendix III.
- 20.9% of the 153 incidents that included species identifications involved species that were (1) categorized as threatened in the IUCN Red List (CR, EN or VU), (2) included in CITES Appendices I or II, and (3) included in Schedules I or II of the Wildlife (Conservation and Security) Act, 2012 - species included tigers (13); fishing cats and spotted pond turtles (4 incidents each); Indian pangolin, narrow headed soft shelled turtle and three-keeled land tortoise (2); and leopard, elongated tortoise, river terrapin, Indian peacock soft shell turtle, and Asiatic black bear (1).
- 32.9% of the incidents reported arrests but in only just over half of the arrests (42) was there mention of a court case being filed (5.2%) or the offender being jailed (8.8%), fined (1.2%) or both fined and jailed (2.8%).
- 188 incidents mentioned the number of wildlife criminals involved with a mean of 2.8 criminals per incident (range 1-17).
- Only 37 incidents included an estimate of the monetary value of confiscated wildlife with a median of US\$12,500 (range = 8-466,250) and values greater than US\$100,000 reported for two incidents of gecko trading (numbers of individuals unknown); one of three live tiger cubs; one of 873 spotted pond turtles; one of 5,000 unidentified freshwater turtles; and one of 952 Indian star tortoises. *Note that high-value incidents probably receive greater press attention and may not be representative of the 85.1% of incidents where a monetary value was not reported.*

- In the 244 incidents with information on responding agencies, 29.1% each involved the BFD and BP as the lead enforcement agency, 14.3% RAB, 11.5% BGB, 7.0% CG, 3.3% the Airport Armed Police (AAP), 2% CU, 1.2% each MC and Environmental NGOs, with the Border Security Forces of India, a citizen environmentalist, a livestock officer, local people and the Bangladesh Special Security Force engaged in < 1% (one or two) of the total incidents.
- 79.9% of the incidents reported that only a single government agency was involved while 20.1% reported more than one agency was involved including the BP (23.1%), MC (21.2%), BFD (19.2%), CU (9.6%), Environmental NGOs (7.7%), RAB (3.8%), and the BGB, AAP, and local people mentioned in one incident each; only 2.4% reported a third agency.
- There was an apparent increase in the number of unique incidents reported on wildlife trade and poaching from 30 in 2012 to 82 in 2015, with an apparent decline to 59 in 2016 possibly due to reduced activities of the WCCU before its operations were suspended after the end of the World Bank funded SRCWP Project.
- 69.2% of the total incidents involved the entire body (153 alive and 17 dead), while the remaining incidents reported skins (13.0%), meat (14.2%), bone (2.8%), nautilus shells (1.2%) and hornbill beaks (0.8%) with the total greater than 100% because 3.2% of the total incidents involved more than one body part including skin, bones and meat.
- Of the 176 incidents that included details on the action taken regarding live animals, carcasses or body parts, 54% were reported as seized by a government agency, 21.6% live rescue with fate unknown, 19.9% live rescue and released, 3.9% buried or destroyed, and one incident as sold in a local market.
- 75.9% of the total incidents involved domestic wildlife trade, 23.3% international trade, and 0.8% unknown, with the number of incidents involving international trade probably underestimated because incidents of domestic trade may be an early stage of a larger trade chain involving international trade.
- 43.8% of the total incidents took place in the Khulna Division (located adjacent to the Sundarbans mangrove forest which is Bangladesh's largest protected area and home to species at risk of extinction from wildlife trade such as tigers), 23.3% in Dhaka, 11.6% in Barisal, 7.6% in Rajshahi, 5.6% in Chittagong, with less than 5% in either Sylhet or Rangpur, and none in Mymensingh (Figure 3). However, expert opinion from the field indicates that the media search may have underestimated trade in the Sylhet and Chittagong Divisions, especially in areas bordering India and Myanmar, respectively, due to the remoteness of these regions.



Figure 3. Map of Bangladesh showing the percentage of wildlife trade incidents recorded in each division from the national media search according to very frequent (> 40%; red), frequent (<40% but >10%; yellow), moderate (<10% but > 5%; gray) and low (<5% but > none; blue).

Table 1. Details of media searched from 2012-2016 and added to our Wildlife Trade Media Database of 283 articles including 61 duplicate stories on the same incident.

Name of media source	Source type	Language	How media was searched	Total # of articles including doubles
Daily Purbanchal	Regional newspaper	Bangla	Page by page	90
banglanews24.com	National web news	Bangla	Keywords and page by page	83
Daily Prothom Alo	National newspaper	Bangla	Keywords	44
Daily Ittefaq	National newspaper	Bangla	Keywords and page by page	21
The Daily Jugantor	National newspaper	Bangla	Keywords and page by page	19
The Daily Star	National newspaper	English	Keywords and page by page	11
Daily KalerKantha	National newspaper	Bangla	Keywords	7
bdnews24.com	National web news	Bangla	Keywords and page by page	3
Daily Samakal	National newspaper	Bangla	Keywords	2
suprobhat.com	Regional newspaper	Bangla	Keywords and page by page	2
ctgtimes.com	Regional newspaper	Bangla	Keywords and page by page	1

Table 2. List of species categorized as Critically Endangered (CR), Endangered (EN) or Vulnerable (VU) in the IUCN Red List and listed (LS) or not listed (NL) in either CITES Appendix I or II, their common and scientific names, the number of separate incidents of trade or poaching documented in 249 incidents from 11 media sources in Bangladesh, IUCN Red List status, CITES Appendix and Bangladesh Wildlife (Conservation and Security) Act, 2012, schedule listing.

Common name	Scientific name	Number of incidents	IUCN Red List status	Cites Appendix listing	Bangladesh Wildlife Act Schedule
Tiger	<i>Panthera tigris</i>	13	EN	I	I
Fishing cat	<i>Prionailurus viverrinus</i>	4	VU	II	I
Spotted pond turtle	<i>Geoclemys hamiltonii</i>	4	VU	I	NL
Indian star tortoise	<i>Geochelone elegans</i>	3	VU	II	NL
Narrow headed soft shell turtle	<i>Chitra indica</i>	2	EN	II	I
Pangolin	<i>Manis sp.</i>	2	CR	I	I
Three keeled land tortoise	<i>Melanochelys tricarinata</i>	2	VU	I	NL
Burmese python	<i>Python bivittatus</i>	2	VU	II	NL
Elongated tortoise	<i>Indotestudo elongata</i>	1	EN	II	I
River terrapin	<i>Batagur baska</i>	1	CR	I	I
Olive ridley turtle	<i>Lepidochelys olivacea</i>	1	VU	I	I
Indian peacock soft shell turtle	<i>Nilssonina hurum</i>	1	VU	I	I
Asiatic black bear	<i>Ursus thibetanus</i>	1	VU	I	I

International media search

We also searched for incidents of wildlife trade and poaching between 2012-2016 using keyword searches in Google for priority wildlife species, including those LS as threatened in the IUCN Red List or listed in Appendix I or II of CITES or included in Schedule I or II of the Wildlife (Conservation and Security) Act, 2012. This international media search revealed 26 articles of which six were about the same incident. We kept the most informative article to include in our database for a total of 20 unique articles (five in the Traffic website; three in The Hindu newspaper; two each in The Star and Times of India newspapers; and one each in the Hindustan Times, The Economic Times, The Financial Express, The Statesman, The Straits Times newspapers, and Asianet Newsable, Mashable, Today Online web, and news.com.au websites) involving 30 unique species or species group incidents of wildlife trade (Table 3).

Of the 30 species or species group incidents of wildlife trade documented:

- 36.7% were related to trade in black pond turtles; 13.3% to Indian star tortoises; 6.7% to narrow-headed softshell turtles; 6.7% to Asian elephants, tokay geckos, and unidentified freshwater turtles; and 3.3% (or one incident) to unidentified carnivores, crowned turtles, Indian eyed turtles, Indian flapshell turtles, Indian roofed turtles, pangolins, tigers, three keeled turtles, and unidentified tortoises.

- 43.3% were included because the species or species group originated in Bangladesh; 23.3% because they were about species native to Bangladesh being traded from areas close to the border in India or Myanmar; 20% because Bangladesh was used as a corridor for species originating from and being exported to other countries; and 13.3% because Bangladesh was the destination for the species being traded from another country.
- Of the 56.7% of incidents where the species originated outside of Bangladesh, all were from India.
- From the 28 incidents that could be identified to species, 60.7% were considered VU, 21.4% EN, 7.1% LC, and 3.6% or one CR in the IUCN Red List, with 7.1% unassessed.
- From these same incidents, 60.7% were included in CITES Appendix I, 32.1% in Appendix II and 7.1% were not listed.
- From the 28 incidents that could be identified to species, 77.8% were listed in Schedule I, 7.4% in Schedule II and 14.8% were not listed in the Wildlife (Conservation and Security) Act, 2012.
- 83% of the incidents involved live animals, while 17% involved dead animals or their body parts.
- 40.0% of the incidents involved seizures in Thailand, 36.7% in India, 10% in Singapore, and 6.7% each in Bangladesh and Malaysia.
- The median number of specimens documented in the 27 incidents that reported this information was 480 (range = 1-6,430), with freshwater turtles and tortoises accounting for all incidents (20) involving more than seven specimens.
- Of the 14 incidents that reported information on the nationality of the wildlife trader, 71.4% were from India, 14.3% were from Bangladesh, and 7.1% or one incident each was from Pakistan and Russia.
- The median number of traders/poachers involved in 18 incidents that reported information about the number of traders/poachers was 8.3 (range = 1-62).
- 47.2% of the total incidents reported an arrest, but no information was reported on convictions.

Table 3. List of species categorized as Critically Endangered (CR), Endangered (EN) or Vulnerable (VU) in the IUCN Red List and listed in either CITES Appendix I or II, their common and scientific names, the number of trade or poaching incidents in 30 species or species group incidents documented on wildlife trade from international media sources, IUCN Red List status, CITES Appendix and Wildlife (Conservation and Security) Act, 2012 Schedule listings of the species or species group (NL = not listed).

Common name	Scientific name	Number of incidents	IUCN Red List status	CITES Appendix listing	Bangladesh Wildlife Act Schedule
Narrow headed soft shelled turtle	<i>Chitra indica</i>	2	EN	II	I
Asian Elephant	<i>Elephas maximus</i>	2	EN	I	I
Tiger	<i>Panthera tigris</i>	1	EN	I	I
Pangolin sp.	<i>Manis sp.</i>	1	EN	I	I
Black pond turtle	<i>Geoclemys hamiltonii</i>	11	VU	I	NL
Indian star tortoise	<i>Geochelone elegans</i>	4	VU	II	NL
Three keeled land tortoise	<i>Melanochelys tricarinata</i>	1	VU	I	NL
Crowned turtle	<i>Hardella thurjii</i>	1	VU	II	NL
Indian eyed turtle	<i>Morenia petersi</i>	1	VU	II	NL

Targeted interviews

Government officials

We interviewed 16 government officials (nine from the BFD, three from the RAB, two from the BGB, one from CU, and one from the DoF). Regarding the importance of combatting illegal wildlife trade to their agency, 56.3% rated it very high, 31.2% high, and 12.5% low. Regarding the general awareness of CITES, 37.5% of the interviewees rated it very low, 25.0% medium, 12.5% high and 25.0% very high. Regarding how well staff from their agency had been trained in combatting illegal wildlife trade, 31.3% of the interviewees rated their training as very low, 50.0% low, 18.0% medium, and 0% high or very high.

Of the total number of interviewees, 56.2% said they or their staff had received training on wildlife crime investigation, 37.5% on general issues related to wildlife trade, 18.8% on SMART patrolling, 12.5% on wildlife law and international conventions, 6.3% (or one interviewee) on wildlife conservation management and use of firearms. The same interviewees suggested that additional training would be helpful with 68.8% mentioning wildlife crime investigation, 37.5% wildlife laws and international conventions, 31.3% wildlife identification in the field, 12.5% SMART patrols and wildlife conservation management, and 6.3% (or one interviewee) wildlife research technology, veterinary skill and firearms training.

In response to a question about what steps are needed to strengthen their respective agency's response to combatting wildlife crime, 62.5% mentioned overall capacity building; 50.0% strengthening logistics and equipment; 37.5% increased staffing; 25.0% budget increase, greater ability to gather intelligence and increased interagency collaboration; 18.8% legal changes and research; 12.5% local awareness raising efforts; and 6.3% (or one interviewee) reported that no additional steps were needed.

Regarding collaboration with other agencies, only one interviewee from the BGB said that they did not collaborate with other agencies, while one interviewee from the BFD said they collaborated but did not mention an agency. Of the remaining 14 interviewees, 57.1% mentioned they collaborate with RAB, BP, and the CG; 50% with the BGB; 35.7% with the BFD; 14.3% with CU; and 7.1% (or one interviewee) with INTERPOL, district or local administration, public prosecutor, and the Bangladesh Navy. The relatively small proportion of interviewees reporting collaboration with the BFD can be explained by the fact that half of the interviewees were from the BFD. Of the total number of wildlife trade incidents handled by their respective agency, interviewees estimated that domestic trade was involved in 85% of the incidents while international trade in 15% of the incidents.

NGO staff

Very few NGOs in Bangladesh work directly on wildlife trade. We interviewed three NGO representatives, two from the WildTeam (WT) and one from the Bangladesh Environment and Development Society (BEDS). The two representatives from the WT rated the importance of wildlife trade to their organization and their awareness of international obligations under CITES as medium. The team member from BEDS said that wildlife trade is currently a low priority for his organization and that their knowledge of CITES and training on wildlife trade was also extremely low. All three interviewees have previously received training on SMART and two representatives from the WT had undergone training on basic wildlife crime analysis and one on wildlife law enforcement. The three interviewees identified training as a priority need to combat wildlife trade, especially on species identification, rehabilitation of confiscated animals, investigating wildlife trade routes, evidence collection, preservation and analysis of confiscated carcasses and body parts, investigating criminal networks, preparing wildlife crime cases, new technology (e.g., drones or mobile apps), market survey training and forensic analysis. Operational priorities for combatting wildlife trade mentioned by the interviewees included intelligence gathering in local communities, modern law enforcement equipment, strengthened manpower, ensuring payment of operational

costs for law enforcement activities, improved joint interagency operations, support for transboundary investigations and information sharing, improved infrastructure (buildings, communication and transportation) and field allowances for wildlife crime operations.

Shark and ray traders

Interviews with wildlife traders were valuable but limited to sharks and rays. Out of a total of 34 requests we made to interview wildlife traders, a total of 31 shark and ray traders in Cox's Bazar (29), Kuakata (1) and St. Martin's Island (1) agreed to be interviewed. The reluctance of wildlife traders to be interviewed can almost certainly be explained by increasing awareness of the illegality of wildlife trade. However, the legal status of trading in sharks and rays is not as clear. The recent arrests of shark and ray traders in Bagerhat, a landing site for fishermen operating in waters offshore the Sundarbans and Meghna River mouth, led to a reluctance of shark and ray traders in this area to speak with us.

Interviewees gave information about trading an average of 4.8 species each (range 1-8) each. Altogether this worked out to a total of 148 records of 23 species or species groups split almost evenly between sharks and rays. Species reported as being traded by more than five interviewees included spadenose sharks (17.0%), Annandale's guitarfish (11.6%), long-tailed butterfly rays (10.9%), pigeon sharks (8.2%), tiger sharks (8.2%), unidentified rays (6.8%), sharpnose stingrays (6.8%), scalloped hammerhead sharks (6.1%), and requiem sharks (*Carcharinus* sp.) (4.1%), with the remaining 20.4% traded less frequently including leopard stingrays, unidentified sharks, Bleeker's whiptails, whiptail stingrays (*Himantura* sp.), devil rays, spintail devil rays, unidentified bamboo sharks, blacktip reef sharks, blacktip sharks, milk sharks, Ganges river sharks, unidentified sawfish, and unidentified skates. Of the identified species, according to the IUCN Red List, 53.8% were considered NT, 15.4% VU, 15.4% DD, 7.7% (or one species) EN (scalloped hammerhead shark) and one LC. All incidents involved species not listed in CITES appendices except for scalloped hammerhead sharks which are listed in CITES Appendix II.

Of the 95 interview survey records of species that included answers on buying frequency, 68.4% were purchased daily, 21.1% 1-4 times a week, 9.5% 1-3 times a month and 1.1% less than once a month. Of the 91 interview survey records that included answers on seasonality, 68.1% were purchased all year round, 14.3% only in the pre-monsoon season (April-May), 13.2% only in the winter (Nov-Jan), 3.3% only in the rainy season (Jun-Oct), and 1.1% only in the spring (Feb-Mar). Of the 53 interview survey records that included answers on transport, 51.0% were by truck/van, 20.8% by push cart, 15.1% by tricycle van, 9.4% by auto rickshaw, and by 3.8% bus. The average total weight purchased per month for 128 species or species group records was 2,889 kg (range 12-28,000).

The overall average buying price from fishers was US\$2.0/kg (range 0.4-25.3) versus the average reported selling price of US\$5.9/kg (1.1-38.0). From all 148 records, 89.2% involved the entire carcass, 4.7% only involved dried meat, 4.1% only fins, 1.4% only fresh meat, and 0.7% only skin. Of the 114 species or species groups records that included information on the buyer, 23.4% reported that they came from the Bandarban, 18.5% from Khagrachari, 18.0% from Chittagong, 14.4% from Rangamati, 8.1% from Cox's Bazar, 5.4% from Dhaka, 5.4% from Gopalganj, 1.4% from Barisal and 1.4% from Khulna Districts of Bangladesh with 4.1% from Myanmar.

Twenty-nine shark and ray traders who agreed to answer questions about the how long they had been involved in the shark and ray trading business reported an average of 13.2 years (range 0.8-46). Of the 26 traders who answered if they had other sources of income, 20 reported that shark and ray trading was their sole source of income while 9.5% reported that about 80% of their income was derived from trading in sharks and rays, 4.8% reported 50% of their income was derived from trading in sharks and rays, and 9.6% reported that less than half of their income was derived from sharks and rays. The respondents who

reported having other sources of income mentioned fish drying, shop keeping, and trading salt. Almost three quarters of the respondents declined to answer questions about if they or anyone they knew had gotten in trouble for trading in sharks and rays with almost all who did answer the question saying that they did not face trouble except for one individual who mentioned being “mugged” by the police.

Visits to wildlife markets

Visits were made to markets, fish landing sites, and restaurants that were known or suspected to sell wildlife carcasses or body parts (Table 4). For all observations of wildlife carcasses or body parts information was recorded on (i) species name - including description of key identification features; (ii) whole carcass or name of body parts; (iii) amount (# of pieces, kg); (iv) source type (collected, bought from hunter, bought from middleman, and bought from other market); (v) source location or area; (vi) price paid (piece, kg); (vii) price expected for sale (piece, kg); (viii) anticipated buyer (domestic or international), and (ix) photo frame number taken by investigator.

Altogether we made 40 visits averaging 1.7 hours each to 14 markets, fish landing sites, and restaurants where we suspected wildlife products might be sold or consumed. Locations were in the following divisions: Barisal (1 visit to 1 fish landing site), Chittagong (12 total visits to 5 markets, 4 restaurants, and 1 fish landing site), Dhaka (21 total visits to 7 markets), Khulna (5 total visits to 4 markets), and Sylhet (2 visits to 2 markets) (Figure 4). Wildlife carcasses or body parts were documented during 43.9% or 18 of the total visits. During visits when wildlife was observed, 61.1% included rays, 44.4% freshwater turtles, 33.3% birds, 22.2% lizards, 22.2% deer, 16.7% sharks, 11.1% frogs, and 11.1% snakes. *Note that the total is greater than 100% because more than one species or species group was found during 9 visits to markets, fish landing sites, and restaurants.* Species of priority conservation concern, due to their IUCN Red List threatened status as EN or VU and CITES Appendix I or II listing, included spotted softshell turtles, grey pheasants, red-breasted parakeets, mottled rays (recorded once), leopard stingrays (recorded twice), and Bleeker's whiprays (recorded once). The relatively high price paid by primarily domestic consumers for barking deer meat (>US\$20/kg) and unidentified frogs, snakes, and freshwater turtles (>US\$9/kg) is reason for concern especially considering rise in the number of middle class consumers and their spending capacity. The large number of sharks (501) and rays (211) recorded during visits to three fish markets, one each in Dhaka, St. Martin's Island, and Chittagong is also reason for concern.

Table 4. List of species or species groups recorded during 40 visits to 18 different markets, fish landing sites, and restaurants where we suspected wildlife was being sold. IUCN Red List Category - DD = Data Deficient, EN = Endangered, LC = Least Concerned, NT = Near Threatened, VU = Vulnerable, NL = Not Listed; Divisions -Ch = Chittagong, Dh = Dhaka, Kh = Khulna, and Sy = Sylhet; Domestic or International - D = domestic and I = International; and Body parts - DM = Dried meat; F = Fin, M = Meat, and WB = Whole Body.

Common name of species or species group	Scientific Name	IUCN Red List Category	CITES Listing	GoB Wildlife Schedule	Division(s) where sold	# of records	Body parts	# of pieces	Total Weight (kg)	Price bought (US\$/ piece)	Price bought (US\$/ kg)	Price for sale (US\$/ piece)	Price for sale (US\$/ kg)	Domestic and/or international buyer
Mottled ray	<i>Aetomylaeus maculatus</i>	EN	NL	NL	Ch	1	WB, F, DM	1	25	No info	1.3	No info	1.8	D & I
Bleeker's whip ray	<i>Himantura bleekeri</i>	VU	NL	NL	Dh, Ch	2	WB	8	34	No info	3.8	No info	3.2-4.4	D & I
Leopard sting ray	<i>Himantura leoparda</i>	VU	NL	NL	Dh	1	WB	2	10	No info	3.8	No info	No info	D
Sharpnose sting ray	<i>Dasyatis zugei</i>	NT	NL	NL	Ch	2	WB	23	42	No info	3.5-3.8	No info	4.4	D
Long-tailed butterfly ray	<i>Gymnura poecilura</i>	NT	NL	II	Ch	1	WB, F	1	No info	No info	2	No info	2.2	D & I
Red breasted parakeet	<i>Psittacula alexandri</i>	NT	II	I	Kh	1	WB	2	No info	No info	No info	25.3	No info	D
Barking deer	<i>Muntiacus muntjak</i>	LC	NL	I	Ch	4	M	No Info	No info	No info	6.3	No info	20.7-21.9	D
Spotted flapshell turtle	<i>Lissemys punctata</i>	LC	II	II	Dh,Sy	2	WB,M	2 (DH only)	1 (DH only)	8.9	No info	10.1	No info	D
Grey peacock Pheasant	<i>Polyplectron bicalcaratum</i>	LC	II	I	Ch	1	WB	4	No info	No info	No info	No info	10.1	D
Indian roofed turtle	<i>Pangshura tecta</i>	LC	I	I	Dh	1	WB	2	0.7	3.8	No Info	5.7	No info	D
Rose ringed parakeet	<i>Psittacula krameri</i>	LC	NC	II	Kh	1	WB	2	No info	No info	No info	19	No info	D

Table 4 (continued)

Common name of species or species group	Scientific Name	IUCN Red List Category	CITES Listing	GoB Wildlife Schedule	Division(s) where sold	# of records	Body parts	# of pieces	Total Weight (kg)	Price bought (US\$/ piece)	Price bought (US\$/ kg)	Price for sale (US\$/ piece)	Price for sale (US\$/ kg)	Domestic and/or international buyer
Annandale's guitarfish	<i>Rhinobatos annandalei</i>	DD	NL	NL	Ch	1	WB,F, DM	30	640	No info	2.8	No info	3.2	D & I
Monitor Lizard	<i>Varanus sp.</i>	NE	NL	NL	Ch	4	M	No Info	No info	No info	5.1	No info	12.7	D
Unidentified ray	N/A	NE	NL	NL	Dh,Ch	3	WB	211	38 (for 11 rays)	No info	No info	190 for one 16kg ray	4.4-12.7	D
Unidentified shark	N/A	NE	NL	NL	Ch	3	WB	501	7.5 (for 1 shark)	No info	2.2	No info	1.6-4.4	D
Unidentified frog	N/A	NE	NL	NL	Ch	2	M	No info	No info	No info	No info	No info	12.7	D
Unidentified snake	N/A	NE	NL	NL	Ch	2	M	No info	No info	No info	3.8	No info	11.5-12.7	D
Jungle fowl	<i>Gallus sp.</i>	NE	NL	NL	Ch	1	WB	1	No info	8.9	No info	No info	No info	D
Unidentified dove	N/A	NE	NL	NL	Ch	1	WB	2	No info	8.9	No info	No info	No info	D
Unidentified heron	N/A	NE	NL	NL	Ch	1	WB	2	No info	No info	No info	No info	No info	D

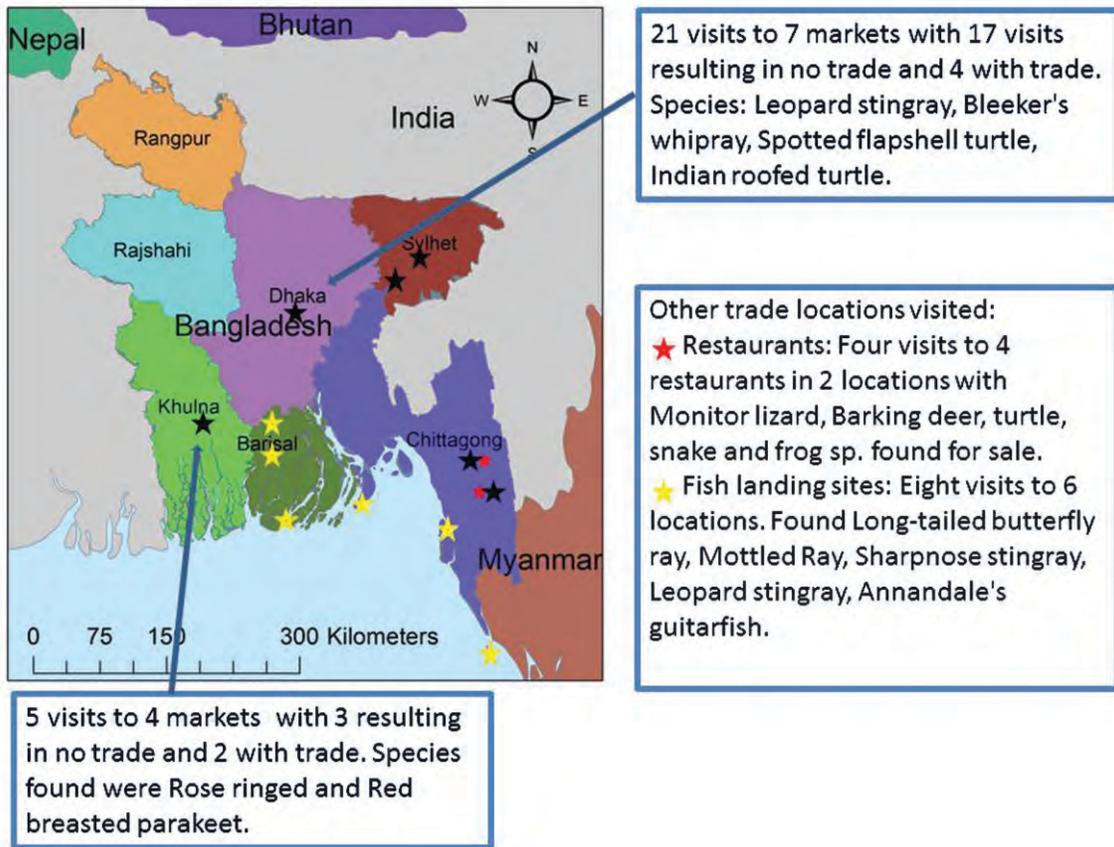


Figure 4. Map of Bangladesh showing the locations of markets (black), restaurants (red) and fish landing sites (yellow) visited with annotations indicating the number of visits and species encountered.

Examination of wildlife trade records

Government records

Although we received good cooperation from government officials during the wildlife trade scoping study, some were reluctant to allow us to examine official records of wildlife seizures and arrests. Unpublished records at the WCCU were also unavailable because, as mentioned above, the unit has been temporarily shut down due to lack of funds.

We were able to compile records from a few secondary sources. These include (i) captions from photographs in a booklet on wildlife crime and law enforcement in Bangladesh published as part of the World Bank funded SRCWP (WCCU 2017) (Table 5); (ii) wildlife offences in Bangladesh from 2012-2016 from WCCU (2017) (Table 6); (iii) wildlife offenses recorded by the Dhaka Wildlife Division in 2007-2014 (although data missing from November 2007 to October 2010), Rajshahi Wildlife Division in December 2012 to September 2014, and Sylhet Wildlife Division in 2012-2014; (iv) information from Tables 1-3 in the National Wildlife Crime Control Strategy Report on Wildlife Crime also prepared as part of the SRCWP (Pabla and Boonratana 2015) (Table 7); and (v) records of wildlife seizures from the BGD between July 2012 and February 2017 (Table 8). In the latter data set we were able to match slightly more than half the BGD seizures with records in our domestic wildlife trade media search database.

Table 5. Records of wildlife trade seizures in 2015 and 2016 from photograph captions in WCCU (2017) with information included on the data of confiscations, common and scientific names of the species, type of confiscation, number of specimens and political division.

Date of confiscation	Common name of species	Scientific name of the species	Type of confiscation	# of specimens	Division
18-Jan-15	Tiger	<i>Panthera tigris</i>	Dead	1	Dhaka
2-Mar-15	Indian pond turtle	<i>M. trijuga</i>	Live	No info	Dhaka
9-Mar-15	Deer	<i>n/a</i>	Dead	No info	Dhaka
9-Mar-15	Migratory bird	<i>n/a</i>	Dead	77	Dhaka
7-Oct-15	Bird	<i>n/a</i>	Live	80	No info
19-Jan-16	Tokay gecko	<i>Gekko gecko</i>	Live	1	Dhaka
4-Apr-16	Parakeet	<i>Psittacula sp.</i>	Live	No info	Dhaka
5-Apr-16	Parakeet	<i>Psittacula sp.</i>	Live	No info	Chittagong
17-Apr-16	Bird	<i>n/a</i>	Live	32	Dhaka
2-Jun-16	Bird	<i>n/a</i>	Live	4,000	Khulna
30-Aug-16	Indian spiny-tailed lizard	<i>Saarahardwickii</i>	Live	No info	Dhaka
27-Sep-16	Bird	<i>n/a</i>	Live	No info	Dhaka
16-Oct-16	Barn Owl	<i>Tyto alba</i>	Live	6	Dhaka
18-Nov-16	Bird	<i>n/a</i>	Live	203	Mymensingh
25-Nov-16	Bird	<i>n/a</i>	Live	1,451	Chittagong
4-Dec-16	Bird	<i>n/a</i>	Live	65	No info
4-Dec-16	Monkey	<i>n/a</i>	Live	2	No info

Table 6. Number of wildlife offences from 2012-2016 reproduced from table on page 12 of WCCU (2017). Note that there are some discrepancies between this table and the table on *Current Status of Wildlife Crime in Bangladesh* in WCCU (2017) which reports some of the same information. POR = Prosecution Offense Report, UDOR = Undetected Offence Report, MC = Mobile Court, BP = Bangladesh Police, RAB = Rapid Action Battalion.

Year	Total wildlife offences	No. of cases										Total	Number of offenders	Cases received punishment or fine
		POR	UDOR	MC	BP	RAB	Mammal	Bird	Reptile	Trophy	Total			
2016	100	6	51	18	2	n/a	93	8,157	393	53	8,696	65	18	
2015	130	6	36	21	11	2	61	3,897	8,997	184	13,139	171	29	
2014	68	9	19	28	8	4	54	2,230	5,700	167	8,151	146	35	
2013	34	12	16	4	5	n/a	45	2,253	3,259	3	5,560	65	11	
2012	42	5	29	2	4	n/a	15	961	1,010	40	2,026	119	8	
Total	374	38	151	73	30	6	268	17,501	19,359	447	37,575	566	101	

Table 7. Wildlife seizures and cases in the Dhaka, Rajshahi and Sylhet Divisions during different time periods from 2007 to 2014 (compiled from Pabla and Boonratana 2015).

Species/Species Group	Dhaka		Rajshahi	Sylhet
	2007-2014*		Dec 2012 - Oct 2014	2012-2014
	Cases	Seizures	Seizures	Seizures
Barn owl	0	0	3	0
Bear	0	0	3	0
Common langur	0	0	3	0
Common palm civet	0	0	19	1
Deer	7	78	0	1
Doves/pigeons	48	860	114	0
Drongo	1	1	0	0
Eagles/kites/falcons	10	19	3	0
Ganges river dolphin	0	0	2	0
Geckos	8	114	15	0
Gharial	0	0	1	0
Jackal	1	3	4	0
Jungle/Fishing/Leopard cat	1	1	24	9
Jungle fowl	1	1	0	0
Asian koel	1	6	0	0
Lesser adjutant	0	0	6	0
Lesser whistling duck	0	0	19	0
Love birds	1	17	0	0
Mongoose	5	9	20	0
Monitor Lizard	1	1	1	1
Monkeys	7	7	0	0
Mud eel	0	0	20	0
Munias/sparrows	32	1,246	0	0
Mynas	32	299	4	58
Openbilled stork	0	0	10	0
Owls	3	4	0	0
Parakeets/Lorikeets	49	1,171	217	0
Peacock	0	0	2	0
Phyre's Monkey	0	0	0	1
Pond Heron	0	0	0	8
Python	0	0	5	0
Rabbit	1	4	1	0
Rhesus macaque	0	0	6	2
Slow loris	0	0	0	1
Small Indian civet	0	0	0	1
Snakes	3	4	0	83
Tiger (live cubs)	1	3	0	0
Turtles/tortoises	8	284	131	0
Various birds	0	0	689	0
Vulture	0	0	11	0
Water birds	27	319	5	0
Wild boar	0	0	0	1
Woodpecker	1	2	0	0

*No data are available for the Dhaka Division from November 2007 to October 2010 and no cases were recorded in February and May 2014 when most of the anti-poaching staff was away on training in India.

Table 8. Summary of wildlife seizures made by the BGB in Khulna between July 2012 and February 2017.

	Freshwater turtle		Gecko		Bird		Python	
	# of incidences	# seizures	# of incidences	# seizures	# of incidences	# seizures	# of incidences	# seizures
2012	1	950	4	17	0	0	0	0
2013	0	0	0	0	4	40	0	0
2014	4	783	0	0	5	91	1	1
2015	12	2,895	0	0	6	197	0	1
2016	1	100	1	11	1	1	0	0
2017	1	19	0	0	1	76	0	0
Total	19	4,747	5	28	17	405	1	1

Available records on wildlife crime were incomplete and there were some discrepancies among different sources. However, it is fair to assume that only a small proportion of wildlife offences are actually detected. Among the data reported by the WCCU on wildlife offenses from 2012-2016, 40.4% were registered as an Undetected Offence Report (UDOR), meaning that the criminals were unknown, and only 10.2% had a Prosecution Offense Report (POR) (Table 6). The remaining cases from 2012-2016 were reported as handled by the MC (19.5%; Figure 5), BP (8.0%) and RAB (1.6%). There was no indication how the remaining 21.3% of cases were handled, but WCCU data indicates a punishment or fine was meted out to 17.8% of a total of 566 offenders. The 40.4% UDOR cases reported by the WCCU is lower than the 59.5% UDOR cases reported by Pabla and Boonratana (2015) for wildlife offences registered in the Dhaka Wildlife Division between 2007 and 2014.

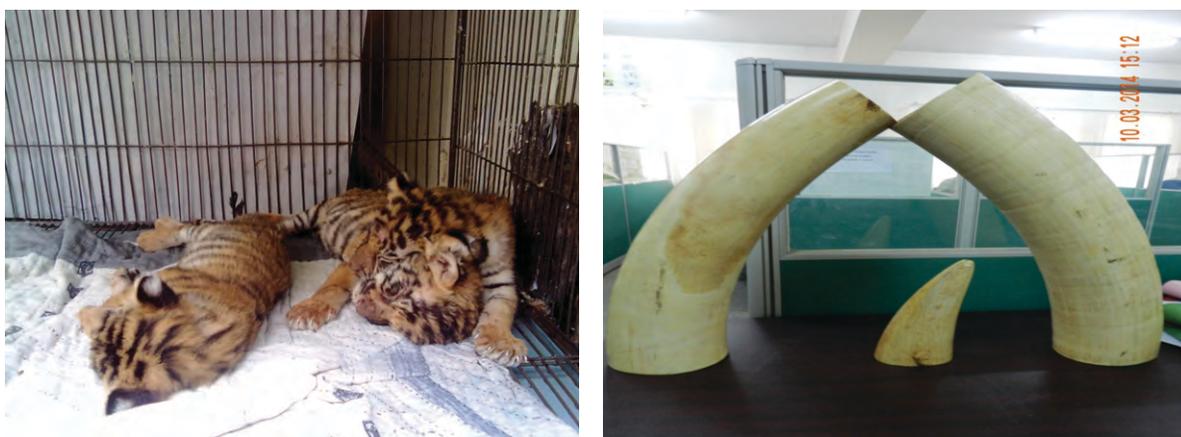


Figure 5. The Mobile Court magistrate increases the effectiveness of GoB efforts to combat wildlife trade crime, enabling the seizure of evidence and indictment of wildlife criminals on the spot. Cases handled by the Mobile court include two tiger cubs (left) and ivory (right).

NGO Records

The CCA conducted a hunting survey in 33 ethnic villages in the Alikodom and Thanchi Upazilas in the Bandarban District of the Chittagong Division (CCA 2016). They recorded 66 species hunted by these ethnic communities. While the hunting was primarily done for subsistence, body parts of certain species such as bear bile, clouded leopard bones and skins, pangolin scales, otter skins, and elephant ivory are traded to Southeast Asian markets. Live individuals of some species, such as hornbills, hill mynas, parakeets, juvenile gibbons, and juvenile bears, are also in high demand in the domestic pet trade.

The WCS China Program collaborates closely with the Government of China on wildlife trafficking matters. From this collaboration WCS-China learned that on July 10, 2015 the Guangzhou Baiyun Airport Customs in China seized 12 Black Pond Turtles and 247 Indian Roofed Turtle from Bangladesh, both of which are listed in CITES Appendix I.

WCS-Indonesia collaborates closely with the Government of Indonesia on wildlife trafficking matters. From this collaboration WCS-Indonesia determined that there is a smuggling route of threatened Indonesian primates through India and into Dhaka.

WCS-India collaborates closely with the Government of India on wildlife trafficking matters. From this collaboration WCS-India has identified a wildlife trafficking network (with a known focus on pangolins and carnivore parts) that operates in South India and trades to China through Bangladesh (see for example: <http://www.thehindu.com/news/national/tamil-nadu/gang-with-links-to-international-wildlife-trade-busted-in-str/article6600395.ece>).

Wildlife trade according to species and species groups

Large mammals

From a species perspective, trade in large mammals in Bangladesh is limited because, as summarized above, most are already locally extinct from hunting, trade and habitat loss. However, our national media search revealed that 89 (or 35.7%) of all species or species group incidents were about large mammal trade and poaching. Of these incidents, 73 or 81.9% were deer (31 unidentified, 40 spotted and 2 barking), 13 or 14.6% tiger, two bears (one Asiatic and one unidentified), and one leopard. Three incidents of large mammal trade were found in the international media search including two of Asian elephant tusks and one of three tiger cubs.

Tiger

Of the 13 tiger incidents in the national media search, one was of three live cubs, two were a carcass, eight were skin, one was bone, and one was of a large artery. Seven confiscations were identified as coming from the Sundarbans while the source location of the remaining confiscations was unknown. An arrest was also mentioned in seven incidents. International trade was mentioned in only one incident and there were no details on the source country except for “smuggled from abroad.” Market value was mentioned in two incidents - US\$150,000 for the three live tiger cubs and US\$18,750 for one tiger skin. The incident involving three tiger cubs was also documented in the international media search. Although tiger pugmarks have recently been recorded in the Bandarbands by the CCA, tiger distribution in Bangladesh is limited almost entirely to the Sundarbans. Poaching, particularly using poison bait, for international wildlife trade is one of the main causes of the population decline of tigers in the Sundarbans (Aziz et al. 2013). The emerging international trade in tiger bones, introduced by non-local Bangladeshi traders, provides opportunities to sell tiger parts in the commercial trade and is a strong motive for tiger poaching (Saif et al. 2016).

According to interviews conducted by the CCA in the remote CHT, at least three tigers have been poached in the Sangu Reserve Forest between 2010 and 2015. Local people reported that tiger trapping was done by professional trappers from Myanmar with the help of local ethnic communities. The trappers visited the Sangu Reserve Forest several times a year and set wire traps for tigers.

Leopard

One incident was recorded in the national media search of a leopard (*Panthera pardus*) confiscated from a market in Dhaka. It is unknown where the animal came from or the identity of the subspecies. Although this appears to be an isolated incident, it is important to recognize that leopards are CR in the Bangladesh National Red List (IUCN Bangladesh 2015). A recent study on the Indochinese leopard (*P. p. delacouri*) found (i) it now only occurs in probably 6.2% of its historical range with only 2.4% confirmed; (ii) the subspecies has been extirpated in Singapore, likely extirpated in Laos and Vietnam, nearly extirpated in Cambodia and China, and greatly reduced in Malaysia, Myanmar, and Thailand; and (iii) poaching for the illegal wildlife trade is likely the main factor causing their decline (Rostro-García et al. 2016).

Deer

All reported incidents of deer trade were for domestic trade in meat and skins. In only 13 of 73 incidents was there mention of an arrest. One article stated that a single dead barking deer could be sold for US\$375. Although we were unable to distinguish between deer species for 42.5% of the incidents recorded in the national media wildlife trade database, most are believed to be spotted deer, due to their occurrence in large groups and open meadow habitat versus the solitary habitats of barking deer in closed forests. Barking deer meat was recorded in four different restaurants in the Bandarban. Although both deer species are considered LC in the IUCN Red List, there have been substantial population declines and local extinctions driven by hunting of spotted deer across much of their range (Raman 2013), and intensive hunting of barking deer may be causing declines especially in isolated populations vulnerable to local exploitation (Bennet et al. 2000). According to interviews conducted by the CCA, barking deer as well as sambar deer (*Rusa unicolor*) are commonly hunted by ethnic communities in the CHT primarily for subsistence but also to meet demand for deer meat in Bandarban town and other tourist spots in the CHT. Deer trophies are sold in Bandarban town (Figure 6 left). It should be recognized that while most deer species are not globally threatened, both spotted and barking deer species are key prey for tigers, and in many instances it is the loss of prey that is the dominant threat to tiger populations (Karanth and Smith, 1999). Hence the illegal trade in deer could be impairing the recovery of tigers in Bangladesh.

Bear

Both bear incidents, one Asiatic and one unidentified, in the national media search were live confiscations from circuses in the Rajshahi Division. The fate of these animals was not stated. Asiatic black bears are considered VU and they are under particular pressure from commercial poaching for their gall bladders and claws. Live captures for circus displays may be causing additional pressure on wild Asiatic bear populations in Bangladesh (Figure 6 right) which have reportedly declined by >60% over the past 30 years. Asiatic bears are comparatively better off than the country's two other native bear species: sloth Bears are reported to be extirpated while sun bears nearly extirpated (Islam et al. 2013). Both Asiatic black bear and sun bears are reported to be opportunistically hunted by local communities in the Sangu Reserve Forest primarily for subsistence and retaliatory killing to prevent the animals from destroying their crops. Bear bile is also reported traded to neighboring Myanmar through middlemen.



Figure 6. Sambar deer horns being openly in a shop in Bandarban Town (left). Live baby Sun bear captured by ethnic people in Sangu Reserved Forest to be transported to Dhaka to meet local demand or for pet trade (right).

Elephant

The international media search identified two incidents of trade in elephant tusks. Both were concerning tusks that originated and were confiscated in India (one in West Bengal and one in Tamil Nadu). However both articles mentioned Bangladesh as a corridor for international trade in elephant tusks to China. Endangered Asian elephants were once widespread in Bangladesh but are now restricted to the Chittagong Division in the southeast and occasionally in the New Samanbag area of Maulvi Bazar District in the northeast coming from the neighboring Tripura, Meghalaya, and Assam states in India (Choudhury et al. 2008). These elephants could be targeted by poachers if international demand for elephant tusks and other products, including meat and leather, is not reduced. According to interviews conducted by the CCA, elephants are hunted for their skin and ivory by ethnic Khumi people from neighboring Myanmar. Insurgent groups, active in the border areas, are also known to hunt elephants for subsistence and trade.

Small mammals

Small mammals accounted for only 12 or 4.8% of the total incidents of wildlife trade in the national media search.

Small cats

Seven fishing cats (6 live and 1 dead), considered VU in the IUCN Red List (Mukherjee et al. 2016), were confiscated during four incidents in Dhaka and Rajshahi according to the national media search. One case was an illegal circus confiscation. Another article mentioned that a live fishing cat was worth US\$125 and that the trader was jailed for six months and fined US\$625. Although the conservation status of fishing cats appears to be relatively safe in the Sundarbans (Raman et al. 2016), records of 27 killings in one year in the Howrah and Hooghly districts of West Bengal, India, close to the border with Bangladesh and the Sundarbans, indicate that poaching could be a problem in the near future (Mukherjee et al. 2012).

A jungle cat was seized from the same circus mentioned above. Jungle cats are considered LC in the IUCN Red List (Gray et al. 2016) but like other small cats, they may be vulnerable to local extinctions without protection from poaching and wildlife trade.

A dead leopard cat was seized at the Mongla Port near the Sundarbans. The CG who made the seizure reported that the skin was for international trade, but there was no information about the trader. Leopard cats are considered LC. However, their skins are trafficked internationally for the fur trade which could promote hunting pressure and potentially threaten local populations (Ross et al. 2015).

According to interviews conducted by the CCA, four species of small cats: clouded leopard, marbled cat, Asiatic golden cat and leopard are commonly hunted by local communities in the Sangu and Matamuhuri Reserve Forests. Hunting is done primarily for subsistence but the skins and bones are traded to Southeast Asian markets through middlemen (Figure 7). The bones are reported to be sold for approximately 100 USD per kg.



Figure 7. Clouded leopard skin and bones found in an ethnic village in Sangu Reserved Forest. The CCA uncovered six hunting records of clouded leopards from 2014-2016.

Pangolins

Pangolins were involved in two incidents in the national media search: one beaten to death by local villagers in the Rangpur Division and one a live confiscation in Sylhet. Only a single incident was identified in the international media search for pangolin trade. This article reported on trafficking in their scales as part of a larger wildlife trafficking syndicate operating from Tamil Nadu, India, with Bangladesh mentioned as a corridor for trade to China.

In a recent review of pangolins in Bangladesh, Trageser et al. (2017) reports that, although three out of four Asiatic pangolin species have been reported in Bangladesh: CR Sunda pangolins (*Manis javanica*), EN Chinese pangolins (*M. pentadactyla*), and EN Indian pangolins (*M. crassicaudata*), only the Chinese Pangolin can be confirmed. Historical records of the other two species are likely the result of misidentifications. Pangolins are a priority wildlife conservation concern in Bangladesh due to (i) the CR status of the Chinese pangolin; (ii) that pangolins are the most globally trafficked CITES protected mammal (Zhou et al. 2014); (iii) their over-exploitation for the traditional Chinese medicine trade; and (iv) that their meat is coveted a status symbol in Vietnam and China.

Monkeys and gibbons

There were two confiscations of five live rhesus monkeys, one in Dhaka and one in Rangpur. In one case, the article mentioned that the trader was fined US\$250 for keeping the animals illegally. No information was available about the fate of the monkeys. Although Rhesus monkeys are listed under CITES Appendix II, they are considered LC in the IUCN Red List and not threatened in South Asia.

According to recent interviews conducted in ethnic communities by the CCA, hoolock gibbons, Phayre's langurs (*Trachypithecus phayrei*) and capped langurs (*Trachypithecus pileatus*) are captured in the Sangu-Matamuhhuri Reserve Forest and sold to Bengali traders in Alikdom and Thanchi Upazila, Chittagong Division, for the pet trade in Dhaka. The extent of live trade in monkeys and gibbons remain unknown.

Reptiles

Reptiles were the most frequent species group identified in the national media search accounting for 115 of a total of 249 wildlife trade incidents of which 47.8% were freshwater turtles, 40.7% geckos/lizards, 6.1% snakes, 3.5% tortoises, and the remainder one incident each of a marine turtle and crocodile. Reptiles were also the most frequent species group identified in the international media search with 25 of 30 incidents of which 76.0% were freshwater turtles, 16.0% tortoises, and 8.0% tokay geckos. Reptiles were tied with sharks and rays as the most frequent species group found in markets, restaurants and fish landing site where wildlife was suspected to be sold, accounting for 14 of 40 incidents of which 57.1% were freshwater turtles, 28.6% lizards and 14.3% snakes.

Freshwater turtles and tortoises

Incidents of freshwater turtles were a mix of domestic and international trade with Bangladesh as a source, importing country, and corridor for international trade. International trade chains were highly variable with turtles originating from i) Pakistan with Bangladesh as a trade corridor to Thailand; ii) Bangladesh with Indonesia as a trade corridor to Singapore; iii) Bangladesh with India as a trade corridor to Hong Kong/China and iv) India with Bangladesh as the destination for consumption (Figure 8).

Of particular concern among the 55 freshwater turtle incidents are (i) one seizure of one river terrapin due to its CR status and CITES Appendix I listing; (ii) two seizures, both at Hazrat Shahjalal International Airport in Dhaka, totaling 670 EN narrow headed softshell turtles, one shipment destined for Malaysia with no value reported, and the other to an unknown destination, but reportedly for US\$21,000 for 557 turtles; (iii) four seizures amounting to almost 1,500 spotted pond turtles with one at the Hazrat Shahjalal International Airport of 510 turtles reportedly worth US\$25,000 being sent to Malaysia, two seizures of 731 and 100 turtles at the Benapole International Port in Jessore, Khulna Division, coming from India, and one of six turtles at a local market for domestic consumption; iv) one seizure with an unknown number of CR river terrapins, EN elongated tortoises, and EN narrow-headed soft-shelled turtle shells seized in Chittagong City in a shipment weighing 4,000 kg and stored in 142 sacks destined for Hong Kong; v) two seizures of 952 and 415 VU Indian star tortoises, the first seized in Jessore and reportedly worth about US\$466,000, and the second at the Hazrat Shahjalal International Airport with the value unknown; and vi) two seizures of 90 and 87 VU three-keeled turtles, the first seized at Hazrat Shahjalal International Airport from a flight from India and the second in Jessore from a fruit basket shipment from India.



Figure 8. Illegal trade of freshwater turtles requires urgent attention. Large numbers of turtles and tortoises destined for the international turtle trade are regularly seized at the international airport in Dhaka and border towns.

Freshwater turtles accounted for 63.3% of 30 wildlife trade incidents identified in the international media. Of particular concern were 11 incidents of 2,802 VU black pond turtles, four incidents of 2,154 VU Indian star tortoises, and two incidents of 81 EN narrow-headed soft-shell turtles. Of the 11 incidents that included information on a source country, Bangladesh accounted for nine while India accounted for five. Of the 13 incidents that included information on the destination (final or in-transit to another country) Bangladesh accounted for five; Indonesia, Malaysia and Thailand two each; and Singapore and Hong Kong one each.

During visits to markets, fish landing sites and restaurants where wildlife trafficking was suspected to occur freshwater turtles were recorded in 8 of 40 species/species group incidents (four incidents in restaurants in the Bandarban, and two each in markets in Dhaka and Maulvibazar in the Sylhet Division. Sellers were secretive and generally hid the specimens before we could identify the species. We could identify the species in three incidents: spotted flapshell turtles (two incidents for a total of six turtles with a buying and selling price reported to be US\$8.9 and US\$10.1 per turtle, respectively) and Indian roofed turtles (one incident for a total of two turtles with a buying and selling price reported to be US\$3.8 and US\$5.7, respectively). Both spotted flapshell and Indian roofed turtles are considered LC, and the Indian roofed turtle is also listed in CITES Appendix I and Schedule I of the Wildlife (Conservation and Security) Act, 2012. The four freshwater turtle incidents in restaurants in the Bandarban could not be identified to species. However, they were reportedly purchased for US\$ 3.8/kg and sold for US\$11.5-12.7/kg.

An article in an international newspaper outside of the time period of our media search in 2001⁵ reported on the “sacrificial slaughter” of 100,000 turtles during the Kali Puja celebration selling for £6 (US\$ 7.7) to £37 (US\$47.7)/kg. The same article mentioned that the freshwater turtle trade provides income for up to 30,000 people and that, due to its porous border security, Bangladesh had become a hotspot for the illegal turtle trade with turtles smuggled in from neighboring nations and then either consumed locally or re-exported.

Using data from 223 enforcement seizure reports, Mendiratta et al. (2017) found that more than half of India's freshwater turtle and tortoise species were illegally harvested, with over 58,000 live individuals seized during 2011-15. Nearly 90% of all seizures were for illegal export to pet and meat trading hubs in Bangladesh as well as Thailand, and four other East/Southeast Asian countries.

⁵ <https://www.wcs.org/our-work/solutions/illegal-wildlife-trade>

Geckos and lizards

Of the 47 gecko/lizard incidents, 45 were for a total of 246 geckos (most but not all identified as tokay geckos) and two were monitor lizards. Although neither of these species groups are considered threatened in the IUCN Red List, the extraordinarily high prices reported in some articles (US\$43-12,500 each) make the international trade in geckos a potential emerging concern. Based on interviews with gecko dealers and seizure records, Caillabet (2013) reported that the trade in tokay geckos for “novel medicinal claims” (diabetes, cancer, and HIV/AIDS), which appeared to have begun around late 2009 and peaked in 2010/2011, now appears to be in decline. The reasons for this initially high demand followed by a reduced demand are unclear but it could be related to a combination of improved enforcement and the realization among consumers that these novel medicinal claims are unfounded. However, the same report also stated that the international trade in tokay geckos for traditional Chinese medicine remains “colossal.” Since 2015, there has been a reported increase in demand for flying geckos (*Ptychozoon sp.*) which occur in the CHT but are difficult to find.

Snakes

Of the seven snake incidents documented in the national media search, two were unidentified cobras, four were unidentified pythons, and one was an unidentified snake. All but two were live and all were for domestic trade except for one python incident which was reported to be worth US\$3,750. Two incidents of snake trade were also recorded at two different restaurants in the Bandarban. Both were unidentified but reportedly bought for US\$3.8/kg and sold for US\$11.5-12.7/kg. According to a study conducted by the CCA, reticulated (Figure 9a) and Burmese and python skins are traded in remote parts of the CHT.

Birds

Twenty bird species accounted for 29 or 11.6% of total wildlife trade incidents in the national media wildlife trade database. Three separate international trade incidents in Khulna resulted in the seizure of 60 cockatoos and 26 “foreign birds,” with the latter reportedly worth a total of US\$3,500. These birds were being imported into Bangladesh to supply the ornamental bird market. Three species incidents involving international trade were from the same seizure at the Hazrat Shahjalal International Airport in Dhaka of 160 birds that included African gray parrots, green parakeets, and golden-mantled rosellas. African gray parrots are listed as EN in the IUCN Red List and are included in CITES Appendix I. The other 19 species recorded in the national media search are considered LC or unassessed in the IUCN Red List, although four including barn owl, black kite, griffon vulture, and blossom-headed parakeet are listed in CITES Appendix II.

No incidents of bird trade were identified in articles from the international media search however 6 out of 40 species or species group incidents recorded during our visits to markets, fish landing sites, and restaurants were of birds. Of these six incidents the only species of conservation concern were two NT red-breasted parakeets being sold live for US\$25 each.

According to interviews conducted by the CCA in the CHT, great, wreathed and oriental-pied hornbills are regularly hunted by the ethnic communities in the Sangu and Matamuhuri Reserve Forest. Their meat is regularly consumed by local people and the casque (helmet-like structure on the bill of a hornbill) sold to middlemen. There is a store in Bandarban Town where hornbill casques and other wildlife trophies are sold. Baby hornbills are collected during the nesting season in March to May and also sold to middlemen (Figure 9b). Each individual cost approximately US\$50. Live baby hornbills are reportedly sold through Facebook.



Figure 9. (a) Burmese and reticulated python skins are captured opportunistically and traded in the Chittagong Hill Tracts (CHT) (left); (b) Baby hornbills are often sold openly by middlemen through social media platforms for the local pet trade (right).

Sharks and rays

The national media search revealed two incidences of wildlife trade amounting to a total of 35 unidentified sharks. One incident involved trade in 30 sharks weighing a total of 1,200 kg and reportedly worth US\$1,375. Few details were provided about the other shark incident but it was reported that the trader was arrested and jailed. We also recorded two incidents of trade in unidentified rays, both single specimens weighing 320 and 380 kg each and selling for about US \$500 each. Although we cannot confirm, both incidents may have been of VU giant manta rays, due to their large reported sizes.

Evaluating the status of shark trade from media searches was not as useful as it was for the other wildlife groups. This is because sharks and rays have only been recently treated as wildlife in Bangladesh. For instance, it was not until the passage of the Wildlife (Conservation and Security) Act, 2012, that any shark or ray was protected by national law. The current Act includes protection in Schedule I for 17 shark species (Table 9) and 11 ray species (Table 10). However, 12 shark and 12 ray species suspected to occur in Bangladesh and that are considered threatened (CR, EN or VU) in the IUCN Red List and/or are listed in CITES Appendix I or II are notably missing from being included in Schedule I of the Act, and thus lack legal trade protection.

Additional information on shark and ray trade was collected by WCS from informal interviews (Figures 10 and 11) indicated that the price of sharks ranges from 200 to 1,000 BDT per kilogram depending on the size of the animal. A whole shark about 3 meters long sells for about 30,000 to 40,000 BDT and larger sharks sell for as much as 50,000 BDT of which the majority of the profit is from the fin. Fishermen reported that the market price is 6,000 - 12,000 BDT for dried sharks longer than one meter and 400-500 BDT/kg for smaller sharks. A shark fin 0.3 meters high generally sells for 1,200 BDT with larger fins commanding a much higher price. Shark oil sells from between 40 to 68 BDT/liter and is used for treating body pain and recovering from dysentery.

Ray meat sells for up to 4,000 BDT per kilogram. A ray skin can be sold for between 800 to 20,000 BDT depending on the size and species. These skins are used for leather goods like purses and medicinal purposes. Dried ray meat and oil is in high demand for reportedly curing cancer and kidney disease. There is special demand for sawfish whose flesh and oil is believed to have exceptional medicinal properties. Guitar fish meat generally sells for 200 BDT/kg for fish that weigh up to 40 kg but can sell for as much as 8,000 BDT/kg for medicinal purposes. Shark fins and ray gill rakers are generally bought by businessmen from Chittagong for international export.

According to fish traders, sawfish rarely appear in fish markets and landing sites. However, from October 2016 to March 2017, ten sawfish were recorded caught and sold in Cox's Bazaar and Chittagong. Most were reported caught in bottom and mid-water trawls. One weighed about 1,600 kg with a rostrum about 1.5 meters long and sold for about US\$ 5,000. Traders reported that the meat can be sold for about 3,000 BDT/kg as some people believe that it can cure diseases and illnesses especially cancer and the rostrum can sell for as much as 20,000 BDT depending on the size. In May 2017, a sawfish was caught in a stern trawling net. It weighed 450 kg and was 6 meters long. The sawfish was shipped to Chittagong where it reportedly sold for 1,000 BDT/kg or about 5,625 \$US in total.

Despite legal shortcomings and confusion about which sharks and rays are protected and which are not, the GoB has demonstrated a strong international commitment to combatting shark and ray trade. This was demonstrated by their recent successful co-sponsorship of proposals to include silky sharks (*Carcharhinus falciformis*), thresher sharks (*Alopias* spp.) and mobula rays (*Mobula* spp.) in CITES Appendix II.

Table 9. List of common and scientific names of sharks, status listings in the IUCN Red List, CITES Appendices and Wildlife Protection Act of Bangladesh, 2012, and their record of occurrence in Bangladesh according to WCS confirmation, range in IUCN Red List map, listing in BoBLME Report (Hoq et al. 2011) and in FishBase - CO = Country occurrence, HP = High priority habitat suitability, IO = Indian Ocean, LS = Listed, MP = Medium priority habitat suitability, NL = Not listed.

Common name	Scientific name	Status listings				Record of occurrence		
		IUCN Red List	CITES Appendix	Wildlife Act 2012 Schedule I	WCS Confirmation	IUCN Red list	BoBLME Report	FishBase
Ganges shark	<i>Glyphis gangeticus</i>	CR	NL	LS	No	IO	LS	CO
Scalloped hammerhead	<i>Sphyrna lewini</i>	EN	II	LS	Yes	IO	LS	CO
Great hammerhead	<i>Sphyrna mokarran</i>	EN	II	NL	No	CO	NL	CO
Winghead shark/ Slender hammerhead	<i>Eusphyra blochii</i>	EN	NL	LS	No	CO	LS	CO
Zebra shark	<i>Stegostoma fasciatum</i>	EN	NL	LS	No	CO	LS	CO
Whale shark	<i>Rhincodon typus</i>	EN	II	LS	Yes	CO	LS	CO
Speartooth shark	<i>Glyphis glyphis</i>	EN	NL	NL	No	NL	LS	NL
Broadfin shark	<i>Lamiopsis temminckii</i>	EN	NL	NL	No	IO	NL	CO
Big eye thresher shark	<i>Alopias superciliosus</i>	VU	NL	NL	Yes	IO	LS	MP
Common thresher shark	<i>Alopias vulpinus</i>	VU	II	NL	No	IO	NL	MP
Smooth hammerhead shark	<i>Sphyrna zygaena</i>	VU	II	LS	No	NL	LS	MP
Hooktooth shark	<i>Chaenogaleus macrostoma</i>	VU	NL	NL	No	NL	LS	MP
Tope shark	<i>Galeorhinus galeus</i>	VU	NL	NL	No	NL	LS	NL
Snaggletooth shark	<i>Hemipristis elongata</i>	VU	NL	NL	No	IO	LS	NL
Tawny nurse shark	<i>Nebrius ferrugineus</i>	VU	NL	NL	No	IO	NL	CO
Shortfin mako	<i>Isurus oxyrinchus</i>	VU	NL	NL	No	CO	NL	CO
Silky shark	<i>Carcharhinus falciformis</i>	VU	II	LS	Yes	CO	LS	NL
Oceanic whitetip shark	<i>Carcharhinus longimanus</i>	VU	II	NL	No	CO	NL	CO
Sharptooth/ Sickletfin lemon shark	<i>Negaprion acutidens</i>	VU	NL	NL	No	IO	NL	CO

Table 9 (continued)

Common name	Scientific name	Status listings				Record of occurrence			
		IUCN Red List	CITES Appendix	Wildlife Act 2012 Schedule I	WCS Confirmation	IUCN Red list	BoBLME Report	FishBase	
Grey bamboo shark	<i>Chiloscyllium griseum</i>	NT	NL	LS	Yes	IO	LS	CO	
Grey Carpetshark/ Brownbanded bamboo shark	<i>Chiloscyllium punctatum</i>	NT	NL	LS	No	IO	NL	NL	
White-cheek/ Widemouth blackspot shark	<i>Carcharhinus dussumieri</i>	NT	NL	LS	No	CO	LS	NL	
Blacktip shark	<i>Carcharhinus limbatus</i>	NT	NL	LS	Yes	IO	LS	CO	
Hardnose shark	<i>Carcharhinus macroti</i>	NT	NL	LS	No	CO	LS	CO	
Spot-tail shark	<i>Carcharhinus sorrah</i>	NT	NL	LS	Yes	IO	LS	NL	
Tiger shark	<i>Galeocerdo cuvier</i>	NT	NL	LS	Yes	IO	LS	CO	
Spadenose shark	<i>Scoliodon laticaudus</i>	NT	NL	LS	Yes	CO	LS	CO	
Spotless smooth-hound shark	<i>Mustelus griseus</i>	DD	NL	LS	No	NL	LS	NL	
Milk shark	<i>Rhizoprionodon acutus</i>	LC	NL	LS	Yes	CO	LS	CO	

Table 10. List of common and scientific names of rays, status listings in the IUCN Red List, CITES Appendices and Wildlife Protection Act of Bangladesh, 2012, and their record of occurrence in Bangladesh according to WCS confirmation, range in IUCN Red List map, listing in BoBLME Report (Hoq et al. 2011) and FishBase (www.fishbase.org): CO = Country occurrence, HP = High priority habitat suitability, IO = Indian Ocean, LS = Listed, MP = Medium priority habitat suitability, NL = Not listed.

Common name	Scientific name	Status listings				Record of occurrence		
		IUCN Red List	CITES Appendix	Wildlife Act 2012 Schedule I	WCS Confirmation	IUCN Red list	BoBLME Report	FishBase
Green/ Longcomb sawfish	<i>Pristis zijsron</i>	CR	I	LS	No	NL	NL	NL
Largetooth sawfish	<i>Pristis pristis</i>	CR	I	LS	Yes	CO	NL	NL
Pointed/ Narrow sawfish	<i>Anoxypristis cuspidata</i>	EN	I	LS	No	CO	LS	CO
Longheaded eagle ray	<i>Aetobatus flagellum</i>	EN	NL	NL	Yes	NL	LS	NL
Mottled eagle ray	<i>Aetomylaeus maculatus</i>	EN	NL	NL	No	NL	LS	NL
Ocellated eagle ray	<i>Aetobatus ocellatus</i>	VU	NL	NL	Yes	CO	NL	NL
Banded eagle ray	<i>Aetomylaeus nichofii</i>	VU	NL	LS	No	CO	LS	CO
Sharpnose guitarfish	<i>Glaucostegus granulatus</i>	VU	NL	LS	Yes	IO	LS	NL
Clubnose guitarfish	<i>Glaucostegus thouin</i>	VU	NL	NL	No	CO	LS	NL
Giant shovelnose ray	<i>Glaucostegus typus</i>	VU	NL	NL	No	CO	NL	CO
Widenose guitarfish	<i>Glaucostegus obtusus</i>	VU	NL	NL	Yes	CO	LS	CO
Javanese cownose ray	<i>Rhinoptera javanica</i>	VU	NL	NL	Yes	NL	LS	NL
Bowmouth guitarfish	<i>Rhina ancylostoma</i>	VU	NL	NL	Yes	CO	LS	NL
Smooth nose wedgefish	<i>Rhynchobatus laevis</i>	VU	NL	NL	No	CO	NL	NL
White spotted guitarfish	<i>Rhynchobatus djiddensis</i>	VU	NL	LS	No	NL	LS	NL
Bleeker's whipray	<i>Pateobatis uarnacooides</i>	VU	NL	NL	Yes	IO	LS	NL
Honeycomb whipray	<i>Himantura undulata</i>	VU	NL	NL	Yes	NL	LS	NL
Leopard whipray	<i>Himantura leoparda</i>	VU	NL	NL	Yes	NL	LS	NL
Porcupine ray	<i>Urogymnus asperrimus</i>	VU	NL	NL	Yes	IO	NL	NL
Whitespotted whipray	<i>Maculabatis gerrardi</i>	VU	NL	NL	Yes	IO	LS	NL
Spotted eagle ray	<i>Aetobatus narinari</i>	NT	NL	LS	Yes	CO	LS	HP

Table 10 (continued)

Common name	Scientific name	Status listings				Record of occurrence		
		IUCN Red List	CITES Appendix	Wildlife Act 2012 Schedule I	WCS Confirmation	IUCN Red list	BoBLME Report	FishBase
Longtail butterfly ray	<i>Gymnura poecilura</i>	NT	NL	LS	Yes	NL	LS	MP
Spinetail devil ray	<i>Mobula mobular</i>	NT	II	LS	Yes	CO	LS	CO
Bentfin/ Smooth tail devil ray	<i>Mobula thurstoni</i>	NT	II	NL	Yes	NL	NL	NL
Shortfin devil ray	<i>Mobula kuhlii</i>	DD	II	NL	Yes	NL	NL	NL
Bennett's stingray	<i>Hemirhynchus bennetti</i>	DD	NL	LS	No	NL	LS	NL
Bluespotted stingray/ maskray	<i>Neotrygon kuhlii</i>	DD	NL	LS	Yes	IO	LS	NL



Figure 10. A fisherman holds the severed fin and partial tail of a guitarfish being sundried in Cox's Bazar (top left); WCS staff taking measurements of a sawfish rostrum in Kuakata (top right); Buyers of shark and ray products are predominantly from the CHT in southeastern Bangladesh close to the Myanmar border including both fresh (middle row left and right) and dried (bottom row) sharks (left) and rays (right).



Figure 11. Photos taken at fish landing sites in Bangladesh as part of the MacArthur Foundation funded *Project for assessing the status of sharks and rays and developing a national strategy for their conservation in Bangladesh* include the EN freshwater whipray (*Urogymnus polylepis*), scalloped hammerhead shark (*Sphyrna lewini*) and whale shark (*Rhincodon typus*) (top row right, center and left, respectively); VU Bleeker's whipray (*Paleobatis uarnacoides*), Reticulate whipray (*Himantura undulata*), Javanese cownose ray (*Rhinoptera javanica*), (top middle row right, center and left, respectively), Leopard whipray (*Himantura leopard*), bowmouth guitarfish (*Rhina ancylostoma*), bigeye thresher shark (*Alopias superciliosus*) (bottom middle row right, center and left, respectively); and NT spinetail devil ray (*Mobula mobular*) (bottom) - with the latter two species also listed in Appendix II of CITES.

Discussion

Magnitude, extent and complexity of wildlife trade

The results of this study indicate that wildlife trafficking is a major, geographically extensive problem in Bangladesh involving several different taxonomic groups with a large number of species considered globally and nationally threatened and protected by CITES. This conclusion is based on (i) national and international media surveys; (ii) interviews with GoB officials, NGO representatives, and shark and ray traders; (iii) visits to local markets, fish landing sites, and restaurants where wildlife trade/consumption was suspected to occur; and (iv) examination of available records of wildlife crime from GoB and NGO sources.

Our results indicate the complexity of wildlife trade chains that vary according to (i) whether Bangladesh is the country of origin for the species or species group; (ii) whether the species or species group is being consumed or used in Bangladesh versus traded internationally; or (iii) if Bangladesh is being used as a trade corridor for wildlife consumed or used in another country. Further complicating the situation is that the status of species involved in wildlife trade in Bangladesh varies greatly according to national law in the Wildlife (Conservation and Security) Act, 2012 (Schedule I, II, or not listed), CITES (Appendix I, II, III or not listed) and conservation status according to IUCN Red List criteria (CR, EN, VU, NT and DD). This makes it difficult to prioritize wildlife law enforcement efforts and sometimes creates confusion among law enforcement officials.

From a conservation perspective, freshwater turtles and tortoises are probably the highest priority species group in need of urgent attention for combatting wildlife trade in Bangladesh. This is justified by the (i) large number of species involved that are considered threatened in the IUCN Red List and included in CITES Appendix I or II; and (ii) large number of incidents and individuals reported in national and international media searches, visits to markets and restaurants, reports from WCS Programs in India, Indonesia and China, and in Mendratta et al. (2017).

Additional evidence on the magnitude and extent of trade in freshwater turtles and tortoises in Bangladesh is available from the results of a study in neighboring India. This study found that illegal trade to supply pet, meat, and traditional medicine markets for freshwater turtles and tortoises in Southeast Asia and China poses a major threat to ten globally threatened species. These species were among 58,000 live individuals seized by Indian authorities between 2011 and 2015 of which 90% were destined for illegal commercial trade to known pet and meat trading hubs in Bangladesh, Thailand and at least four East/Southeast Asian countries. Of particular concern was trade in VU Indian star tortoises and spotted pond turtles accounting for a total of almost 14,000 of seized individuals and 23% and 20% of seizures, respectively (Mendiratta et al. 2017).

Records of large and small mammals accounted for 36% of the total species incidents. As mentioned above most (82%) were for deer that are not threatened with extinction in the near future. However, the trade in deer is a well-known critical threat to the recovery of tigers across Asia. Additionally, even limited trade in threatened species such as tigers, small cats, and pangolins can drive local extinctions. A powerful example of the vulnerability of mammals to regional extinctions is the fact that, as detailed above, 11 large mammals have already disappeared from Bangladesh. Also, recent evidence suggests that, also as mentioned above, the CR Chinese pangolin has already been extirpated from most areas of the CHT due to commercial hunting for international trade (Trageser et al. 2017).

International trade in tokay geckos is an emerging concern. The high prices reportedly paid for these reptiles indicate a strong demand resulting in international trade that could threaten this species with regional extinction despite their widespread distribution in the country.

The shark and ray trade are also an emerging concern. As mentioned above recent information collected by WCS, as part of a dedicated shark and ray study, found that fish landing sites in the Chittagong (Chittagong City and Cox's Bazar) and Barisal (Kuakata town) Divisions, were trading large numbers of threatened sharks and rays for both national and international markets.

Actors involved and conditions that allow them to engage in wildlife poaching and trafficking

Little specific information is known about the full set of actors involved in wildlife poaching, processing, trafficking and consumption; routes by which wildlife moves to domestic and international markets; and conditions that allow them to engage in wildlife poaching and trafficking. However, our study did reveal that different species groups generally involve different sets of actors.

Interestingly, the study revealed strong local demand for deer meat and skins, ornamental birds, and freshwater turtles which command high prices in local markets and restaurants. This can be explained, in part, by the rising Gross National Income per capita in Bangladesh which has increased, according to World Bank figures, by more than 180% (US\$420/year to US\$1,190/year) during 2000 to 2015.⁶ This has increased local demand for wildlife products and driven a vigorous trade in these species. Freshwater turtles are generally not eaten by Muslims, which represent about 90% of the country's population, but are considered a delicacy by Hindus with high demand especially during religious ceremonies and celebrations.

Although wildlife hunting in the CHT is primarily for subsistence, international demand for pangolin scales, skins and bones of large and small cats, bear bile, and otter skins has resulted in an increase in hunting pressure on these species groups by ethnic communities. Indigenous groups generally hunt animals for meat but will opportunistically sell valuable by-products to wildlife traffickers from Myanmar. These traffickers are middlemen for international trading syndicates and they often visit local villages to acquire wildlife products from indigenous hunters. Although the details are poorly known, depending on the wildlife product, different trade routes are used.

Trade chains and connections with national and transnational syndicates

There remain major gaps of information on wildlife trade chains and the role of transnational syndicates. This hampers the ability of the GoB to combat wildlife trafficking. Anecdotal reports based on informal interviews conducted by the CCA indicate that there exist a (i) domestic trade route for the pet market that includes hornbills, mynas, parrots, and bear cubs from the Bandarban District near the border with Myanmar to Dhaka; ii) international trade route for pangolin scales, and skins and bones of wild cats - also from the Bandarban to Myanmar through border crossings in Mungdao and Zawmdat; and (iii) international trade routes of freshwater turtles from Brahmanbaria (Chittagong Division) and Maulvibazar (Sylhet Division) to the Assam and Meghalaya states in India (Figure 11).

Other international trade routes identified through the international media survey and from information provided by other WCS programs in Asia and interviews with shark and ray traders include (i) 190 VU black pond turtles from Bangladesh reportedly valued at about US\$7,300 for the international pet trade transiting through Changi Airport in Singapore and destined for Surabaya Indonesia; (ii) 97 Asian black spotted turtles reportedly valued at almost US\$90,000 seized near the Kalanchi Border Outpost in India destined for Bangladesh although it not clear if this was the final destination or only a corridor for international trade; (iii) Pangolin scales, elephant tusks, and carnivores body parts from the Sathyamangalam Tiger Reserve, Tamil Nadu India seized from the "Muniyandi" international wildlife trade gang and destined for China through Bangladesh via border crossings in West Bengal; (iv) "thousands" of spotted pond turtles brought from Odisha and Andhra Pradesh States in India to West Bengal for export to China through Bangladesh; (v) 6,430 Indian flapshell turtles in the State of Uttar Pradesh ready to be transported

⁶<http://data.worldbank.org/country/bangladesh>

to West Bengal and then across the border to Bangladesh for consumption of their meat; (vi) 423 Indian star tortoises and 52 black pond turtles in one incident and 72 black pond turtles; six crowned river turtles, one three-keeled land tortoise and one Indian eyed turtle in another incident at the Suvarnabhumi International Airport in Bangkok, Thailand, on flights arriving from Dhaka; and (vii) a vigorous trade in shark fins from Chittagong and Cox's Bazar by boat to the Myanmar border near Teknaf and then transferred to vessels from Myanmar for transport to Yangon and from there to China. Additional details on shark trade generated through interviews indicate international trade in fins to Vietnam, Thailand and Singapore in addition to China, dried meat, skin and intestines to Myanmar, and intestines to India.

Combating wildlife crime in Bangladesh

Similar to the findings of Pabla and Boonratana (2015), our study indicates that the majority of wildlife (i) poached or captured, (ii) occurring in local markets, (iii) consumed by local people, (iv) confiscated by government agencies, and (v) traded across international borders originates from non-protected areas where the BFD generally does not have a strong presence. This often results in a mismatch between the locations of offices, stations, and posts of the government agency charged with wildlife protection (i.e., the BFD) and the locations where wildlife trade is taking place. However, the results of our study also indicate that the extensive involvement of other GoB law enforcement agencies in combatting wildlife trade offer promising opportunities to strengthen inter-government agency linkages.

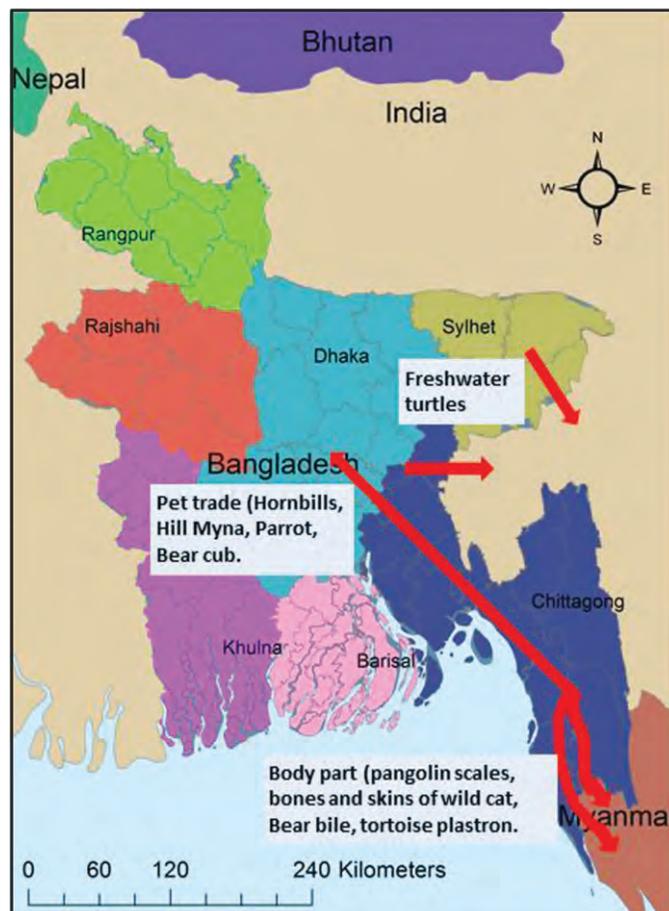


Figure 12. International trade routes for freshwater turtles, ornamental birds, pangolins and wild cats based on anecdotal reports received by the CCA.

The finding that the majority of wildlife entering both national and international markets originates from outside of protected areas indicates that greater efforts are needed to strengthen enforcement of wildlife laws at markets, fish landing sites, and restaurants where wildlife is suspected to be sold. According to our study, particular focus should be made on combatting wildlife trafficking in Khulna, Dhaka, Barisal, Rajshahi, and Chittagong Divisions which accounted for more than 90% of the total incidents of wildlife trade revealed in our search of national media sources. However, it is also vital that rigorous wildlife enforcement and monitoring patrols be strengthened in protected areas because these areas support species (e.g., tigers) that are highly valued by wildlife traffickers, generally do not occur outside of protected areas, and are threatened with extinction in the near future if poaching cannot be significantly reduced.

Our national media search indicated that the BP was the lead agency in the same number of incidents as the BFD (71 or 29.2% each) while RAB (Figure 12), BGB, CG, AAP and CU, were the lead agencies ordered from most to least frequent, in 87 or 37.9% of the total incidences. Also, of the 71 incidents involving the BFD as the lead GoB agency, an additional enforcement agency was involved in 29.6% of these incidents. Although, these results suggest a solid foundation for strengthening interagency links, a slightly contradictory finding is that, of the 172 incidents when the lead agency was not the BFD (172), in only 5.8% of these incidents was the BFD mentioned as a partner agency. This finding was reinforced by interviews with several BFD officials who mentioned that they often must rely on other agencies for support because the BFD has little law enforcement training and lacks sufficient manpower, firearms, and holding facilities to arrest and detain well-armed poaching groups. However, other agencies do not necessarily face these same constraints, or at least to the same extent, which means that they often do not involve the BFD in wildlife crime incidents.

A key challenge faced in combatting wildlife crime is the difficulty of arresting and prosecuting wildlife criminals. Our national media search indicated that an arrest was not made or a case not filed in 67.1% and 82.0% of the total wildlife trade incidents, respectively. One significant impediment is a provision in the Wildlife (Conservation and Security) Act, 2012, that makes BFD officials criminally liable if a judge finds there is insufficient evidence to prosecute an arrested violator. The implication of this provision is that, instead of using this law to arrest and prosecute wildlife criminals, the BFD is using the Forest Act, 1927, to arrest poachers and wildlife traders regardless of their offense. The relatively minor penalties of this law provide little deterrence for poachers. At the same time, the Forest Act, 1927, does not allow flexibility for releasing minor/first-time violators who can be used as informants for catching wildlife poachers or traders engaged in larger operations. Another challenge is that no funds are provided for supporting travel expenses of BFD officials, arrestees, and witnesses for court proceedings.

If a wildlife criminal is arrested and a case is filed, successful prosecutions are rare and the penalties are relatively minor. Based on a sample of 404 court cases (which is a significant number considering that only 374 wildlife crime cases were registered between 2012-2016; WCCU 2017), Pabla and Boonratana (2015) found that it took an average of eight years to obtain a court decision for about one quarter of the cases. The remaining three quarters (282) are still pending. Although the courts awarded convictions in more than 70% of the 92 cases decided by them, the large majority never reached a decision. Of the 64 cases that reached a court decision, according to Table 7 in Pabla and Boonratana (2015), the penalties averaged 11 months jail time (range 1-54 months) and an average fine of about US\$130 per offence with the most common punishment being six months in jail and a 5,000 BDT or US\$63 fine.

Together these findings indicate that the actual proportion of wildlife criminals convicted is negligible and those who are convicted generally receive relatively minor punishments. Thus, there is little deterrence for committing a wildlife crime in Bangladesh, especially when the rewards are high. For example, in our national media search, incidents of wildlife trafficking were reported to be worth more than US\$100,000 for geckos, tiger cubs, spotted pond turtles, and Indian star tortoises.



Figure 13. Seizures of wildlife include two Asiatic black bear cubs (left) and red-breasted parakeets (right) by RAB.

Recommendations

In the *National Wildlife Crime Control Strategy Report* for Bangladesh, prepared as part of the SRCWP Project, Pabla, and Boonratana (2015) identified key strategic priorities to combat national and international wildlife crime. Our study supports these recommendations which are summarized below:

- Legal Reforms including (a) operationalizing the Wildlife (Conservation and Security) Act 2012 by issuing necessary notifications and orders, and reviewing the Forest Act 1927 and Wildlife (Conservation and Security) Act 2012 to better align the two laws; and (b) evaluating the Customs Act 1969, Imports and Exports (Control) Act 1950, Coast Guard Act 1994, Border Guards Bangladesh Act 2012, The Armed Police Battalions Ordinance 1979, and related rules and regulations, to make combatting wildlife crime a core responsibility of these agencies and improve interagency cooperation.
- Strengthening the criminal justice system including (a) developing a comprehensive system for using intelligence to detect and interdict wildlife crime; (b) increasing capacity to train, handle, and control informers and share intelligence with other agencies and special courts; (c) sensitizing judges and prosecutors to make them more aware of the circumstances in which wildlife crimes are committed and the relevance of special legal provisions to secure optimum conviction rates; (d) establishing a strategic program in the BFD for interacting with the judiciary and prosecutors; (e) creating a web-based national wildlife crime database to monitor investigations and prosecutions as well as understand the patterns and trends in wildlife crime and criminal justice; (f) developing wildlife forensic capability in collaboration with other relevant agencies; (g) promoting flagship species and protecting them through species specific action plans; (h) developing a reward and incentive system for exceptional wildlife law enforcement achievements; and (i) reviewing financial allocations to ensure that wildlife protection, critical training, travel, communications, weapons, intelligence gathering, investigation, and prosecution etc. are adequately funded.
- Organizational reforms in the Forest Department including (a) restructuring the Wildlife and Nature Conservation Circle to potentially upgrade its status to a Wildlife Wing headed by a Deputy Chief Conservator of Forests and looking after the “Wildlife Management” and the “Wildlife Crime Control Unit” with multi-agency (BP, RAB, BGB, CU, and CG) representation; (b) ensuring that every frontline staff goes through a mandatory training course on wildlife crime; (c) reviewing the recruitment, training, promotion, and disciplinary systems of the BFD to ensure recruitment of new staff keeps pace with retirement, new recruitments are recruited within the existing BFD structure and designations of new positions are determined on the basis of the definitions in the Forest Act, 1927;

(d) meeting the training needs of each rank adequately; (e) giving out promotions filling position vacancies in a timely manner; (f) ensuring discipline and good conduct according to the principle that an officer is responsible for the performance of his subordinates and that he or she should have adequate disciplinary powers to ensure the same; (g) introducing merit-based selection of Forest Case Conducting Offices and the services of lawyers for consultation in important cases; and (h) meeting the needs of frontline staff for housing, mobility, weapons, risk compensation, and insurance.

- Strengthening interagency cooperation including (a) establishing interdepartmental coordination bodies; (b) clarifying mandates so that controlling wildlife crime is considered a core concern of each agency and that they allocate the necessary resources for this purpose; (c) working with these agencies to develop training programs for new recruits and organizing refresher training for field staff; (e) increasing attention of the cooperating law enforcement agencies through specialized capacity building; (f) developing communication programs to change wildlife consumption behaviors; (g) improving wildlife crime detection and conviction capabilities so that the knowledge of the punishments facing offenders becomes a source of deterrence for others; (e) promoting alternate livelihoods for hunting communities; and (f) promoting demand reduction outside of the country.
- Reducing demand for wildlife including (a) developing communication programs to educate the public about the effect of consuming wildlife; (b) improving and publicizing the crime detection and conviction so that the difficulties faced by the offenders becomes a source of deterrence for others; (c) promoting alternate livelihoods for hunting communities; and (d) promoting demand reduction outside the country.
- Strengthening border control including (a) making rules under the Wildlife (Conservation and Security) Act 2012, for controlling the import and export of wildlife according to CITES requirements; (b) participating in multilateral conservation for combating wildlife crime; (c) strengthening bilateral Agreements with India; (d) working with the National Board of Revenue (NBR) and the Customs Department to review the Customs Act 1969, Imports and Exports (Control) Act 1950, the Export and Import Policy Orders, to provide a clear link with CITES and Wildlife (Conservation and Security) Act 2012; (d) bringing about necessary changes in BGB Act 2010 and Coast Guard Act 1994, and related rules, regulations, orders and notifications, to make wildlife crime as a core duty of these agencies; (e) participating in intergovernmental programs aimed at combating wildlife crime; (f) working with the CU, BGB, and CG to review their needs for capacity building and locating resources to meet these needs through national and international efforts.
- Strengthening community stakes in combating wildlife crime including (a) promoting sustainable tourism with the objective of generating conservation-dependent jobs and business opportunities for local people; (b) retaining revenues of protected areas in a local fund to benefit local communities; (c) providing alternative livelihoods to unsustainable and/or illegal resource users; and (d) mitigating human-wildlife conflict through fencing boundaries of protected areas, subsidizing crop fencing in vulnerable areas, compensating crop losses and livestock deaths caused by wild animals, and strengthening the scope of tiger response teams in Sundarbans.

In addition to the above recommendations, our study points towards more specific suggestions for strengthening efforts to combat wildlife trade and ensure the survival of threatened species. These include:

- Conducting regular trainings and consultations, and developing communication and engagement protocols for GoB agencies to more effectively partner in combating wildlife crime.

The national media database of wildlife trade and our interviews with GoB officials indicate the involvement of a variety of GoB agencies in combatting wildlife trade including the BFD, NP, DoF, CU, BG, RAB, and CG. The BFD has recognized that a lack of uniformity in procedures, practices, and methodology in matters related to wildlife crime leads to legal and operational complications (Dey and Rabbi 2015). In addition, such interagency communication and reporting can help clarify trends and hotspots of wildlife trafficking. A critical need for improving the GoB's ability to combat wildlife trafficking is to strengthen interagency cooperation through joint trainings and consultations, and the development of communication protocols.

- Developing sustainable financing mechanisms to support the WCCU and SMART wildlife enforcement and monitoring patrols.

The WCCU is the lead unit within the BFD for combating wildlife crime. Meanwhile, SMART patrols conducted in the last couple of years in the Sundarbans have played a major role in preventing threatened species from being killed or captured before becoming part of a national or international trade chains. Funding for both of these efforts has been project based. However, the suspension of both these activities in Bangladesh, after the end of the SRCWP Project, demonstrates that hard fought progress on combatting wildlife crime is fragile and efforts will fail if they are not adequately financed. Although special legal provisions may be needed, potential sources of sustainable financing could be to (i) levy a tax on industries and developments in locations near protected areas as a conservation offset to mitigate their impacts, (ii) charging a special fee to tourists entering and tourism operators benefitting from protect areas, (iii) use money made from auctions of confiscated timber from protected areas; and (iv) establish a conservation trust supported by national and international donors.

- Strengthening the capacity of the GoB to implement CITES regulations.

This should include (i) training, mentoring and provision of resource materials including identification guides on CITES Appendix I and II species to relevant government agencies including the BFD, NP, DoF, CU, BG, RAB, and CG. and (ii) increased information sharing from countries importing wildlife from, and exporting wildlife to Bangladesh on international wildlife crime syndicates, arrested individuals, and confiscated specimens.

- Strengthening the capacity of BFD frontline officials to arrest, handle evidence, file cases, transport wildlife criminals, and testify about wildlife crimes.

Attention should be paid to (i) legal reforms, including the changes mentioned above from Pabla and Boonratana (2015), as well as changing the provision holding BFD official criminally liable if the court finds there is insufficient evidence to prosecute an arrested violator, and (ii) establishing a fund to pay for expenses incurred by feeding, housing, and transporting wildlife criminals to the court, and to pay for travel expenses of BFD officials to testify during court proceedings.

- Developing species/species group specific plans for combating wildlife trade.
This recommendation is a priority owing to the wide variety of trafficking chains that characterize different species groups thus requiring different targeted approaches.

Considering the relatively large number of species and individuals being traded as well as their threatened conservation status and listing in CITES Appendices, freshwater turtles should be prioritized for developing a species group specific plan for combatting domestic and international trade.

Other species groups in need of targeted plans, listed in rough order of priority, include small mammals (particularly pangolins and small cats listed in CITES Appendix I), sharks and rays (with a focus on thresher and silky sharks, hammerheads, and mobula rays which were recently listed in CITES Appendix II), and ornamental birds (particularly threatened species being imported and captured in Bangladesh).

Tigers are a major wildlife trade concern due to their iconic and endangered status. However, they are already receiving focal conservation attention in Bangladesh (e.g., BFD/GIZ/WCS collaboration on SMART patrols) and, from an enforcement perspective, there is no confusion about the illegality of their trade. Also tiger poaching and trade incidents are high profile which means that arrests and successful prosecutions of criminals engaged in tiger poaching or trafficking are more common than with other species. The loss of tiger prey is a significant contributing to the EN status of tigers and in many instances, it is the dominant factor affecting their recovery.

Sharks and rays are a special case because domestic trade is legal for most species and not regulated by CITES. However, there is confusion about the legal status of the shark and ray trade, how to identify legal versus illegal species, and the legal situation of bycaught versus intentionally caught individuals. Developing a species group specific wildlife trade plan for sharks and rays should emphasize partnerships between the BFD especially with the Department of Fisheries, Coast Guard, and Navy.

The large number of incidents of wildlife trade in deer meat and skins in the national media search is concerning. However, poaching and consumption of deer normally takes place inside or close to protected areas. Trade appears to be limited to inside Bangladesh and neither barking nor spotted deer are considered threatened in the global IUCN Red List (although barking deer are considered Endangered in the Bangladesh Red List - IUCN Bangladesh 2015). However, as mentioned above, poaching deer could contribute to a declining tiger population especially when combined with the impacts of poaching. The problem of deer trade could potentially be addressed by strengthening the already established law enforcement presence of the BFD inside and around the periphery of protected areas combined with targeted education efforts for communities around protected areas.

Finally, an emerging demand and international trade in tokay geckos is a concern that could threaten this species in the near future. Trade should be monitored and, if it appears to be increasing, a species-specific plan should be made to ensure that trade does not result in the extinction of this species.

- Providing training to news reporters and media representatives on reporting wildlife trade and poaching incidents.
As discussed above, the national and international media searches on wildlife trade were invaluable for providing an overview of the topic and revealing the complexity of wildlife trade chains. However, in many articles, basic information was lacking on species identification; the number of individual specimens and/or weight of their body parts; source, destination, and route of the wildlife trade chain; prices paid for wildlife according to piece and/or weight; what happened to the seized wildlife;

what happened to the poachers/traders; and the government agencies involved and how they detected the wildlife crime. There was also notable absence of articles about the outcome of arrests and court cases filed.

Improving wildlife crime reporting will strengthen monitoring efforts that can be used to help guide enforcement. This especially applies to alerting authorities about emerging issues that can quickly reduce and result in the regional extinction of wildlife populations. For example, Chinese pangolins occurred relatively widespread in the CHT until commercial scale hunting began in 2010 for trade in their scales to China. By 2014, the species was largely extirpated from the area. However, this information was only revealed from after-the-fact interviews. If the situation had been better highlighted in the national press, GoB law enforcement agencies may have been more likely to take appropriate, assertive action.

International trade in tokay geckos maybe an example of an emerging issue that could benefit from better reporting by the national media. Improved reporting on trade in sharks and rays is also a priority due to widespread confusion about the legal status of different species complicated by the fact that a large portion of shark and ray trade is from incidental catches made during legal fishing activity.

- Strengthening and using information from the National and International Wildlife Trade Media Databases, and systematic monitoring of markets, fish landing sites, and restaurants, to guide an effective and adaptive program to combat wildlife crime.

Together with the National Wildlife Crime Control Strategy Report, prepared as part of the SRCWP (Pablo and Boonratana 2015), information from WCS media searches and visits to markets, fish landing sites, and restaurants have established a strong baseline to guide an effective program to reduce/eliminate (i) incentives for poaching and live captures; (ii) domestic demand for endangered species; and (iii) use of the country as a trade corridor for international trade. Sustaining and strengthening these databases can guide enforcement strategies according to (i) species/species group, (ii) geography (Division, District, inside or outside of protected areas), (iii) location of seizure locations (e.g., airport, international marine shipping or fishing port, market, restaurant, etc.), (iv) actors involved, and (v) circumstances that enable and incentivize local and international traders and syndicates to commit wildlife crimes.

- Establish an interagency wildlife crime database to enable analysis of intelligence and information sharing, promote collaboration and improve situational awareness.

Wildlife crime enforcement is most effective when supported by intelligence-led investigations that go beyond opportunistic seizures to proactively uncover wildlife trade chains. An inter-agency wildlife crime database is needed among the BFD, NP, DoF, CU, BG, RAB, and CG. to help them better understand and effectively dismantle illegal wildlife trade chains. One effective option for the database is to employ the i2 Enterprise Intelligence Software which is used for compiling information from wildlife crime investigations, raids, profiling, and informants. This software is the most widely used tool for uncovering linkages in illegal wildlife trade and tracking wildlife criminals (<https://www.ibm.com/us-en/marketplace/enterprise-intelligence-analysis>).

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Appendix 1. Review of Wildlife Protection Laws in Bangladesh

There is a constitutional obligation to protect biodiversity in Bangladesh supported by four main laws including the Wildlife (Conservation and Security) Act, 2012; Biological Diversity Act, 2012; Forest Act, 1972 and Special Powers Act, 1974.

Constitutional Obligation: Article 18A

“The State shall endeavor to protect and improve the environment and to preserve and safeguard the natural resources, bio-diversity, wetlands, forests and wild life for the present and future citizens.”

Wildlife (Conservation and Security) Act, 2012

The Wildlife (Conservation and Security) Act, 2012 defines the penalties (fines and imprisonment) for crimes against wildlife and biodiversity in Bangladesh. Penalties for killing species listed in Schedule 1 range from imprisonment for two to seven years with a fine of BDT 100,000 - 1,000,000 (US\$1,250 - 12,470) for first time offenders, and for a repeated offence - imprisonment for five to twelve years with a fine of BDT 500,000 - 1,500,000 (US\$6,230 - 18,700). Killing species listed in Schedule 2 can result in imprisonment of up to one year for first time offenders or up to two years in the case of repetition of the same offence and a fine of BDT 100,000 (US\$1,250) for a first-time offender and up to BDT 200,000 (US\$ 2,500) for a second-time offender. For collecting, selling, or transporting wildlife or parts thereof listed in Schedule i and ii, penalties include imprisonment for six months to two years and a fine of BDT 30,000 - 100,000 (US\$375 - 1,250) for a first time offender, and imprisonment for one to four years and a fine of BDT 100,000 (US\$1,250) to a maximum of BDT 200,000 (US\$2,500) for repeated offences.

Under the same Act, Clause 32 clarifies that any officer can seize wildlife hunted, possessed, or caught originating from breeding in captivity, found dead, or listed under Schedule 4 (includes trophies). Trophies or memorial objects used by minority communities as traditional, heritage, or part of their daily livelihood will not be confiscated.

The Wildlife (Conservation and Security) Act, 2012 is not yet fully operational because no notifications or rules for implementation have been issued and it does not include the power to arrest suspects, issue search warrants, or to compel witnesses to testify (Pabla and Boonratana 2015).

Even if some territorial divisions do book wildlife cases, they use only the Forest Act 1927, due to the weaknesses in the Wildlife Act, as discussed before.

Biological Diversity Act, 2012

The Biological Diversity Act, 2012 prohibits activities that might have an adverse effect on animals threatened with extinction in the wild as well as endangered or threatened ecological communities of populations of critically endangered species. Punishment for violations of this Act, including orders or rules by the National Technical Committee of Biodiversity (NTCB) are fines of BDT 100,000 (US\$1,250) for first time offenders, BDT 200,000 (US\$2,500) for the repetition of the same offence, and BDT 100,000 (US\$1,250) per day counting from the day of the offence for continuous repetition of the offence.

Forest Act, 1927

The Forest Act, 1927 prohibits damage to or felling of trees and removal of timber as well as hunting or poisoning fish and wildlife from a reserved forest. The punishment under this Act includes imprisonment between six months to five years and a fine from BDT 5,000 - 50,000 (US\$62 - 625).

Special Powers Act, 1974

The Special Powers Act, 1974 provides special measures for the prevention of certain prejudicial activities and for conducting more speedy trials and effective punishment of certain grave offences, including hoarding or “dealing in the black-market” defined as selling or buying anything for purposes of trade at a price higher than the maximum price fixed by or under any law, or, otherwise than in accordance with any law. The Act provides for preventive detention, trial by special tribunals, and sentences of death or life imprisonment for grave offences such as sabotage, counterfeiting, and smuggling.

In addition to these and other laws or regulations, every GoB agency has a specific set of regulations outlined in their respective Citizen Charter that define their duties and responsibilities. A Citizen Charter is a document which states the commitment of a public institution towards the people with respect to standard of services and service delivery, information on services, choice of service delivery, non-discrimination, accessibility, grievance redress, courtesy and proven value for money. Only the Coast Guard's Citizen Charter specifically mentions wildlife (see below).

Appendix 2. Roles of GoB agencies in combating wildlife trade

Forest Department

The Bangladesh Forest Department (BFD - www.bforest.gov.bd) is the lead agency responsible for combatting wildlife crime in the country with other law enforcement agencies including the BP, CG, BG, RAB, CU, BN empowered to enforce wildlife laws through gazette notification (sec. 52 of FA 1927 and section 2 (9) of Wildlife (Conservation and Security) Act 2012).

A challenge faced by the BFD in carrying out their duties to enforce wildlife rules and laws is that most staff in the Wildlife Division and the WCCU are temporary appointments under the SRCWP project, they have little experience or training on wildlife crime issues, and they lack law enforcement empowered titles. For example, many have been appointed as wildlife rangers. However only forest rangers have the power to arrest and detain forest criminals. Also, over 20% of staff positions in the BFD were vacant in July 2014 and most officers have been denied promotions despite the availability of posts (Pabla and Boonratana 2015).

Bangladesh Police

The mission of the Bangladesh Police (BP - www.police.gov.bd) is to provide services to all citizens and make Bangladesh a better and safer place to live and work. The BP include a Criminal Investigation Department, Special Branch, Armed Airport Police, Chittagong and Dhaka Metropolitan Police, along with other units. The INTERPOL National Central Bureau (NCB) for Bangladesh is located at the Police Headquarters in Dhaka to facilitate cross-border police cooperation and combat national and international crime. The BP are also charged with providing immigration related services and security by managing entry and exit of people into and out of the country. The immigration service is provided by the Special Branch of BP. The Citizen Charter of BP does not specify any wildlife related responsibilities. However, these are incorporated into their overall mandate to combat national and international crime.

Coast Guard

The Coast Guard (CG - www.coastguard.gov.bd) works to control piracy and illegal trafficking; protect fishery, oil, gas, and forest resources; and prevent environmental pollution in Bangladesh waters and coastal areas. It also ensures overall security and law and order through security assistance to sea ports and conducts relief and rescue operations in coastal areas during natural calamity. The Bangladesh CG area of jurisdiction are internal waters, territorial waters, contiguous zone, exclusive economic zone, and the continental shelf in the Bay of Bengal, including the waterways of the Sundarbans and major rivers up to Dhaka. The CG Citizen Charter does not specifically mention wildlife, but it has a general mandate to protect fisheries, forestry, and natural resources of Bangladesh. Their mandate also includes the implementation of various seasonal fishery bans.

Border Guards Bangladesh

The Border Guards Bangladesh (BGB - www.bgb.gov.bd), formerly known as Bangladesh Rifles (BDR), is a paramilitary force working to protect the borders, prevent smuggling, and human and drug trafficking. With 720 outposts along the border of Bangladesh, the primary job of the BGB to ensure border protection including tackling illegal trade.

Rapid Action Battalion

The Rapid Action Battalion (RAB - www.rab.gov.bd) is an elite force established by the Ministry of Interior as part of Bangladesh's Armed Police Battalion Ordinance 1979 in 2004. RAB carries out internal security duties, recovers unauthorized arms, apprehends armed criminals and gangs, assists other law

enforcing agencies, and carries out investigations and intelligence gathering on crimes and criminal activities. The primary responsibility of RAB is to maintain law and order inside the country with a focus on terrorism, drugs, and arms smuggling.

Customs

The Bangladesh Customs (www.bangladeshcustoms.gov.bd), under the National Board of Revenue (NBR), has a Customs Intelligence and Investigation Division (CIID) responsible for preventing smuggling and tariff evasions. This Division supports the enforcement of customs law, rules, and regulations in Bangladesh through intelligence gathering and its analysis, as well as seizures. The Citizen Charter for CU does not include any specific details about wildlife trade. Their main mandate is to ensure collection of various taxes within the country. CITES listed biological samples need to be approved by this office for export clearance.

Navy

The Bangladesh Navy (www.navy.mil.bd), under the Ministry of Defense, is responsible for the defense of maritime territorial area and important economic zones, disaster management, counter terrorism, and Blue Water economy development. The primary duty of Bangladesh Navy is maritime security.

Judicial System

The judicial system in Bangladesh (www.minlaw.gov.bd) is based on the written constitution and administered under the Law and Justice Division and the Legislative and Parliamentary Affairs Division of the Ministry of Law, Justice and Parliamentary Affairs. The laws are enacted by the legislature and interpreted by the higher courts. The Bangladesh Supreme Court, the highest court of Bangladesh, has an Appellate and a High Court Division. The Appellate Division handles appeals against the judgment, orders or sentences made by the High Court Division in the case of a substantial question of law as to the interpretation of the constitution, death sentence or life imprisonment, and punishments for contempt of court cases. The High Court Division has appellate jurisdiction from the lower Courts. Sub-Ordinate Courts are divided into Civil Courts and Criminal Courts, which are sub-divided into Session Courts (District Session Courts and Metropolitan Session Courts) and Magistrate Courts. Magistrate Courts hold the limited trial power in Mobile Courts, with varying levels of power according to the classification of the magistrates.

The Mobile Court Act 2009⁷ opened opportunities for more efficient prosecutions of wildlife crime. Magistrates from law enforcement agencies are entitled to hold mobile court at location of crimes with on-the-spot punishments for convicted perpetrators up to the maximum fine and up to two years imprisonment. Cases with more severe offenses that call for a punishment of more than two years in prison must be sent to regular Session Courts.

⁷ <https://resource.ogrlegal.com/legal-system-bangladesh/>

Bangladesh supports a rich diversity of wildlife including significant populations of globally endangered species threatened by domestic and international wildlife trade. This report establishes a foundation of knowledge on wildlife trade and provides effective guidance on a way forward to combat it. It is based on a study conducted by the Wildlife Conservation Society that included national and international media surveys; interviews with NGO representatives, wildlife traders and government officials; visits to local markets, fish landing sites, and restaurants where wildlife trade or consumption was suspected to occur; and the examination of available records from local and international sources. Recommendations include legal reforms, strengthened interagency cooperation, reducing demand for wildlife products, and strengthened capacity within law enforcement agencies to effectively combat wildlife trade.

“ WILDLIFE TRADE IS ONE OF THE MOST URGENT CONSERVATION THREATS FACING GLOBAL BIODIVERSITY INCLUDING ICONIC SPECIES THREATENED WITH EXTINCTION.”



